

PERSONALITIES

By George F. Taubeneck

1934 in Review

This is the fourth instalment of a short history of the electric refrigeration industry during the year 1934. First instalment was published in the Jan. 16 issue, the second in the Jan. 23 issue, and the third, Jan. 30 issue.

In the current instalment is told the story of air conditioning in 1934. The resume will be concluded in the next issue.

Air Conditioning

A new industry—air conditioning—came into its own for the first time last year. Developments in the field were of a wide scope and variety, and more and more electric refrigeration dealers turned to the sale of air-conditioning equipment as an added source of income.

Manufacturers brought out equipment designed for summer, winter, and all-year use; several large department stores and theaters contracted for installation jobs; the new streamlined trains were air conditioned throughout; the use of air-conditioned exhibits at A Century of Progress was vastly increased; hotels, restaurants, hospitals, office buildings, and private homes installed the systems; and "model homes," displayed in various cities, stressed the value of air conditioning as an aid to comfort and health.

Formal recognition of the advance made by the air-conditioning industry, came in December, when Willis H. Carrier, chairman of the board, Carrier Engineering Corp., and generally considered the founder of the industry, was awarded the 1934 medal for distinguished service by the American Society of Mechanical Engineers.

Air conditioning was credited with possibilities of far-reaching importance for improving the health of persons living in American climate by several members of the medical profession who addressed the 40th annual convention of the American Society of Heating & Ventilating Engineers in New York early in February.

Their contentions were borne out, at least in part, by results of a survey announced by the Philadelphia Electric Co. about the same time.

A reduction of 33 per cent in lost time due to respiratory ailments was noted during the first year of the study, made among its own employees, and a further decline in lost time of 43 per cent was recorded the second year.

Also, further investigation showed that efficiency, especially during the hot summer months, was increased to a large extent in air-conditioned offices as compared with those not so equipped. Labor turnover, caused by workers leaving for more comfortable jobs during the hot months, was also greatly reduced.

Another view of the industry's potentialities was given by Willis R. Gregg, chief of the U. S. Weather Survey, at the dedication of Frigidaire's air-conditioned house at A Century of Progress, when he said:

"The energetic, hard-hitting tactics of the northerner, who works hard and plays hard because the climate in which he lives inspires and invigorates him to greater activity, has had much to do with the development in our northern states of giant industries and other activities, with a resultant centralization of buying power."

"Is it too much to predict that air conditioning of the working and living quarters of other residents of more humid areas may cause more activity in those parts that will open up to use natural resources beyond our imagination?"

"Or that the developments made possible by enabling men to work in strength-sapping climates will take up the employment slack and open up new channels of buying power?"

New Equipment

Simultaneous with the A.S.H.V.E. meeting, the third annual Heating and Ventilating Exposition was held at Grand Central Palace, with more than 150 firms displaying equipment ranging from complete year around air-conditioning systems to all manner of parts, accessories, controls, and materials.

Air-conditioning systems for comfort cooling were displayed by the following manufacturers: Air Conditioning Industries, Inc., New York City; Baker Ice Machine Co., Omaha; Bryant Heater Co., Cleveland; Campbell Metal Window Corp., New York City; Carrier Engineering Corp., Newark; Crane Co., Chicago; Fox Furnace Co., Elyria, Ohio; Frick Co., Waynes-

boro, Pa.; General Electric Co., Air Conditioning Dept., New York City; Modine Mfg. Co., Racine, Wis.; L. J. Mueller Furnace Co., Milwaukee; Niagara Blower Co., New York City; Strang Air Conditioning Corp., Kansas City; Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.; L. J. Wing Mfg. Co., New York City; Wood Hydraulic Hoist & Body Co., Detroit; York Ice Machinery Co., York, Pa., and Young Radiator Co., Racine, Wis.

A wealth of new accessories and control equipment for heating and cooling apparatus was also displayed, as well as many of the component parts of air-conditioning installation—fans and blowers, grilles, motors, filters, boilers, humidifiers, finned surface coils, etc.

Fortified by the impetus given the industry early in the year, and convinced that here was an almost unexploited field of tremendous commercial possibilities, manufacturers were not long in increasing their facilities to meet present and expected demands.

Companies, which before had stuck an experimental finger in the air-conditioning pie, made haste to expand their activities, line up additional dealers, and augment their promotion and service departments for installations of all types. Encouraged by the success of these pioneers, other companies, notably Chrysler and Savage Arms, got into the field before the year was far along.

Bearing out its belief in the future of the industry, Westinghouse in January began installation of conditioning equipment in its own laboratories at an estimated cost of \$125,000.

American Radiator & Standard Sanitary Corp. about the same time organized a special air-conditioning division to aid its subsidiaries in coordinating their work in the field.

Auditorium Conditioning Corp., holder of a considerable number of basic patents in the air-conditioning field, began licensing manufacturers to incorporate in their units some of the features which it controlled.

York Ice Machinery Co. brought out six new conditioning units for various types of applications.

In May, Carrier Engineering Corp. added two store coolers and three Freon units to its line, and announced that more than 1000 Carrier dealers were equipped to handle the smaller installations.

Westinghouse then brought out a portable, self-contained air conditioner which operated at low cost and was easily installed, and later introduced compressors for air conditioning up to 6-ton capacity.

There were 24 air conditioners in the Kelvinator line. Prices on the Frigidaire systems, latest of which were self-contained, ranged upward from \$340.

Fox Co. came out with a year-round conditioner, and Crosley entered the field with an air cooled bed canopy, of special utility now that warmer weather was approaching.

Early in June, Savage Arms Co. announced its entry into the air conditioning field, and a short time later developed an all-year system. Lipman's conditioning equipment featured a cabinet type cooler. Kauffman designed two new conditioners, and York contributed to the advance of the industry with a table-high cabinet, designed to deaden the noise of the condensing unit.

Mid-year's biggest news in the field was the entry of Chrysler into the industry. In July came the announcement that the company would manufacture year-round conditioning units and Walter P. Chrysler, Jr., was named head of the organization. Price of the first model, announced a short time later, was \$175, retail.

Other companies making news in the field during the year included Russell Electric Co., Chicago; John J. Nesbitt, Inc., Philadelphia; Electrol-American Co., Clifton, N. J.; Automatic Humidifier Co., Cedar Falls, Iowa; Synchromatic Air Conditioning Corp., Milwaukee; Lewis & Conger, New York City; Minneapolis-Honeywell Regulator Co., Minneapolis; American Air Purifier Corp., New York City; Automatic Products Co., South Bend, Ind.; a Vincent Bendix company, which acquired control of the General Water Treatment Corp. and its subsidiaries; Libby-Owens-Ford, with a window designed especially for use in air-conditioned homes; Fairbanks-Morse Co.; Filtrine Mfg. Co., Brooklyn; Heil Co., Milwaukee.

* * *

Installations

Big news in the air-conditioning industry to start off the year was Westinghouse's landing of the contract to air condition the Tribune Tower in Chicago. The installation included five central duct systems em-

ploying the steam ejector principle, and some 390 unit cabinets for individual offices.

York next installed a 250-ton system in the John Shillito Co. department store in Cincinnati, and Carrier equipment was used in the G. Fox & Co. department store in Hartford, Conn., and in Blauner's, Inc., women's store in Philadelphia. U. S. Leather Goods Co., New York City, and Howe & Lescaze, New York architects, installed Universal systems.

Seven floors of the New York Trust Co. building in New York City were air conditioned with a central water spray dehumidifying system installed by the Cooling & Air Conditioning Corp., division of B. F. Sturtevant Co. The same company, after installing a system in the Burger Phillips department store in Birmingham, Ala., reported a differential of 15° between the inside and outside temperatures.

Air-conditioning equipment, installed in the G. C. Murphy & Co. 5 and 10 cent store in Washington, D. C., enabled that company to double its basement selling space. Cooling & Air Conditioning Corp. did the job, using a central system water spray dehumidifier.

Baker Ice Machine Co., Inc., furnished air-conditioning equipment for a theater in Omaha, and Berland Shoe Stores, Inc., in the same city; and an Igloo system was used in the Billy Boy Nut Kitchen in Oak Park, Ill. Five theaters in Baltimore installed Frick-Freon systems.

Carrier equipment was used in the Smith's Drive-In retail food market in Peoria, Ill., with installation by Hitchcock Sprinkler & Heating Co., local Carrier dealer. Frick refrigeration equipment and Trane unit coolers were used for Maling Bros. Shoe Store, Chicago. Carrier "Weather-maker" equipment was also used to condition Clark's restaurant in Cleveland.

Hotel Weylin's barroom, International Paper Co., and E. R. Squibb & Sons, New York City, were equipped with Frigidaire air-conditioning units, according to H. W. Mersfelder, manager of the air-conditioning division of Frigidaire Sales Corp.

The tap room and lounge of the Hotel Lafayette in Buffalo were furnished with Carrier systems. Auditorium Conditioning Corp., announcing it had made more than 400 installations of air-conditioning equipment to July, included in its list the following department stores:

G. Fox & Co., Hartford, Conn.; Mandel Bros., Chicago; F. Rubenstein & Co., Inc., New Orleans; Hutzler Bros. Co., Baltimore; Arnstein Bros., New York City; John Shillito Co., Cincinnati; Blauner's, Philadelphia, and Miller & Rhodes, Richmond.

Other large installations included the U. S. Treasury Department, Washington, D. C.; Grand Rapids (Mich.) Civic Auditorium; Jackson County Courthouse, Kansas City; Kansas City Municipal Auditorium, and Cincinnati Union Terminal.

American Blower's steam ejector refrigeration was installed in the Rike-Kumler department store, Dayton, Ohio. Frick air conditioned the baking room of the Washburn-Crosby Mill laboratory in Kansas City, Mo., installation being made by the Olchoff Engineering Co. Continental Bank & Trust Co., New York City, air conditioned its safety deposit vault for the convenience of its tenants as well as to attract new ones.

Four newspapers joined the Chicago Tribune in equipping their plants for air conditioning. They were the Christian Science Monitor, Philadelphia Bulletin, Baltimore Sun, and Los Angeles Times.

ELECTRIC REFRIGERATION News employees enjoyed a cool tail-end-of-the-summer when Detroit became the nation's hot spot, with the installation of an air-conditioning system of its own design, made to conform with structural conditions as they existed.

Three stores of the S. S. Kresge Co., two in Washington, D. C., and the third in Peoria, Ill., were equipped with air-conditioning systems by Conditioned Air Corp. of Detroit. Trane and Universal Cooler equipment was used.

Demonstrations of how an air-conditioning system can be combined with a heating plant was made by Frigidaire in making an installation at the main Fred Sanders confectionery store in Detroit. Revision of some of the ductwork made the existing system available for year-around conditioning use.

At least two colleges installed air-conditioning systems during the year. First was Wayne University, Detroit, which installed a winter conditioning unit in August, at a cost of approximately \$24,000. A split steam heating system was put in, utilizing the old warm air furnaces. Air circulation of 250,000 cu. ft. a minute was provided.

In October, Mt. Holyoke college, South Hadley, Mass., completed the installation of 172 General Electric oil furnaces in its 53 buildings. A special arrangement, permitting 120 of the furnaces to operate as a group, furnished heat for 24 of the buildings.

Radio broadcasting stations installing air-conditioning systems during the year included WGBI, Scranton, Pa., (Frigidaire 3-hp. unit cooler for use during the summer months); KPRC, Houston, Tex., (G-E 5-hp. unit with Freon compressor); and KDKA, Pittsburgh, (two Westinghouse 15-ton units).

Public utilities companies were among the principal pushers of air-conditioning equipment.

To give some idea of the wide variety of fields open for development, the Edison Electric Institute in June issued a report listing installations already made for industrial, commercial, and personal use.

While the report covered only installations made by utilities companies in various sections of the country, it was valuable to independent dealers in that it furnished them with concrete evidence on which to base their future sales plans.

Industrial applications included bakeries, candy factories, chemical and drug plants, creameries, fruit ripening rooms, food specialties concerns, tanneries, meat packing firms, mushroom growers, cement testing laboratories, malt manufacturers, wine and beer storage, photographic laboratories, printing and lithographing plants, textile plants, tobacco curing rooms, sugar and fruit storage, and rayon manufacturing plants.

Commercial installations were reported in banks, beauty and barber shops, broadcasting stations, brokers' board rooms and exchanges, business offices, clubs and apartments, churches, depots, florists, funeral chapels, halls, hospitals, hotels, libraries and museums, medical offices, public buildings (including 24 government buildings in Washington, D. C.) office buildings, recreation centers, restaurants, sales and display rooms, schools, shoe repair shops, department stores, smaller stores and shops, theaters.

Figures in the personal classification were admittedly incomplete, but both total and partial conditioning of homes were listed, as well as installations of unit coolers in private offices.

Philadelphia Electric Co. announced in October that its salesmen had sold 31 units in a campaign drive, and Georgia Power Co., a month later, estimated that sales of air-conditioning appliances had added a load of 500 kw. to its power lines.

Electric Farm & Home Authority, in its model display in Chattanooga, Tenn., gave prominent place to conditioning equipment. Westinghouse Mobilaire units were shown as desirable additions to homes and smaller offices, and two RW-12 and four ES-62 units were the heart of the system which furnished conditioned air for the showrooms.

Other large installations included the U. S. Treasury Department, Washington, D. C.; Grand Rapids (Mich.) Civic Auditorium; Jackson County Courthouse, Kansas City; Kansas City Municipal Auditorium, and Cincinnati Union Terminal.

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Pullman Car & Mfg. Corp. gave Frigidaire an order for conditioning one six-car and two nine-car streamlined, aluminum high-speed trains. The cars were being built for the Union Pacific railroad.

Officials of the Chicago & Northwestern railroad announced that 84 air-conditioned cars were in use on the company's lines. Twenty-four of the cars were in use on its trains to the Pacific Coast, while trains to Duluth and Minneapolis were using 60 more. Both ice and mechanical equipment were used.

In October, Mt. Holyoke college, South Hadley, Mass., completed the installation of 172 General Electric oil furnaces in its 53 buildings. A special arrangement, permitting 120 of the furnaces to operate as a group, furnished heat for 24 of the buildings.

Baltimore & Ohio following in the order named.

All cars on day trains operated by the Wabash between Detroit and Chicago were air conditioned, as was the dining car of the night train between Detroit and St. Louis.

Union Pacific used Frigidaire air-conditioning equipment in the first of its three high-speed streamlined trains, built by the Pullman Co. One of the trains was to have six coaches, the other two, nine coaches.

Chesapeake & Ohio went into production of a sound film, in which the air conditioning of its sleeping cars, coaches, and diners played an important part. The C. & O. was a pioneer in the conditioning of railway coaches.

Air conditioning was also bringing back the popularity of the upper berth, according to surveys conducted by the Pennsylvania railroad, and sketchy summer lunches were giving way to more substantial meals on the company's air-conditioned diners.

The New York Central advertised that "white will be worn on the 'Century,'" following complete air conditioning of the world's fastest long distance train. Other air-conditioned cars were on the company's lines between New York and Chicago, Cleveland, Detroit, Cincinnati, Indianapolis, and St. Louis.

Felix S. McGinnis, president of the Southern Pacific, announced near the close of November, that all the company's crack transcontinental trains would be air conditioned by May of 1935, at an estimated cost of \$2,000,000.

Air conditioning shared with swift transportation the spot light as the outstanding contribution of science to better living to be found in exhibit at the World's Fair, 1934 edition of A Century of Progress.

There were no less than 35 exhibits of air-conditioning equipment at the Fair, totaling 705 tons of installation. Restaurants were among the main users, as well as most of the small theaters scattered around the grounds.

General Electric's House of Magic was conditioned with a G-E indirect cooling system. Kelvinator and Westinghouse also featured air conditioning equipment in their products display exhibits.

Gold Mine Job

Romance entered air conditioning with decision of the owners of the Robinson Deep Mine, a gold mine near Johannesburg, South Africa, and one of the two deepest shafts in the world, to go ahead with the largest air-conditioning installation in the world, involving 2,000 tons of refrigeration capacity. The event attracted world-wide notice.

Contract for the job went to Carrier, following a year's study by one of the company's engineers, D. C. Lindsay, in cooperation with Sydney Thompson & Co., Johannesburg, and the mine engineers.

Principal object of air conditioning of the mine was to increase the miners' efficiency by providing more comfortable working conditions, and thereby extending operations to depths at which it had heretofore been impossible to work because of high temperatures and humidity.

In many deep mines, dry temperatures range from 100 to 120° F., with a relative humidity of 90 to 100 per cent saturation.

These temperatures are caused by excess moisture caused by water seepage, rapid increase in rock temperature, rapid increase in temperature of the air due to adiabatic compression as the depth is increased (5° F. for every 100 ft.), heat generated by oxidation of elements in the soil or rock, and other sources such as frictional heat of machinery, explosives, body heat of miners.

Another interest-adding feature of the installation was the belief of economists that application of air conditioning to gold mines might so increase their production that it would be possible for nations to return to the gold standard.

An equipment to move 40

ELECTRIC

REFRIGERATION NEWS

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DETROIT, MICHIGAN, FEBRUARY 13, 1935

Entered as second-class
matter Aug. 1, 1927LIBRARY THREE DOLLARS PER YEAR
TEN CENTS PER COPY**McNeal Chosen
As Manager of
Universal Cooler****Manager of Kelvinator of
Canada Is Selected as
Johnston's Successor**

DETROIT—Ford Ballantyne, acting president of Universal Cooler Corp., last week announced the appointment of F. S. McNeal as general manager to fill the vacancy occasioned by the recent death of G. M. Johnston.

Mr. McNeal has been, for the past seven years, general manager of Kelvinator of Canada, Ltd., at London, Ont., and just recently was elected to the office of vice president of that company.

Before taking over the operation of the Canadian Kelvinator plant he was connected with Leonard Refrigerator Co. of Grand Rapids, Mich.

Mr. McNeal has had many years of manufacturing experience. During the war he was general manager of Conron-McNeal Co. of Kokomo, Ind., which manufactured airplane drop bombs for the government.

He was also at one time general manager of the Wabash Mfg. Co. of Terre Haute, Ind. Mr. McNeal was born in Columbus, Ind.

**Airtemp Distributors
To Meet in Detroit**

DETROIT—The first national convention of distributors for Airtemp, Inc., sales organization for the air-conditioning products of Chrysler Motors, will be held at Hotel Statler here from Thursday to Saturday of this week. Seventy-five distributors are expected to attend.

The 1935 line of Airtemp products will be introduced, and sales, merchandising, and manufacturing plans for the year outlined. Distributors will be taken on a tour of the Chrysler plants, research laboratories, and the new manufacturing plant in the Amplex division.

Officers who will participate in the meeting include Walter P. Chrysler, Jr., president of Airtemp; Fred M. Zeder, Chrysler executive engineer; H. C. Jamerson, general sales manager of Airtemp; J. C. Chambers, assistant general sales manager and director of engineering; E. S. Chapman, president of the Amplex division of Chrysler; D. S. French, director of districts for Airtemp; R. M. Miller, director of sales promotion; and A. C. Staley, chief engineer of the air-conditioning division.

**Kleinschmidt Elected
York Vice President**

YORK, Pa.—Elmer A. Kleinschmidt was elected vice president and secretary of the York Ice Machinery Corp. at the recent meeting of the board of directors.

Mr. Kleinschmidt began his business career with the National Enameling & Stamping Co. in St. Louis. In 1911, he joined the St. Louis branch of the York organization, and in 1927 moved to this city, where he held the position of secretary and general assistant treasurer until his recent election to the vice presidency.

**Groener Will Manage
Porcelain Institute**

CHICAGO—Kurt R. Groener has been named managing director for the Porcelain Enamel Institute, with offices at 612 North Michigan Ave. here.

Mr. Groener was formerly associated with the Gundlach Advertising Agency, in Chicago, the Walker Vehicle Co., and the Bennett-Watts-Haywood Co., publisher.

**Federal Oil Burner to
Distribute Spartons**

NEWARK—The Federal Oil Burner Corp., manufacturer and distributor of range oil burners, has been appointed distributor in northern New Jersey, for Spartan electric refrigerators.

Sales Manager

L. E. TAUFENBACH

**Taufenbach Named
Gibson Sales Head**

CHICAGO—L. E. Taufenbach, former west coast sales manager for the Gibson Electric Refrigerator Corp., has been appointed general sales manager for the Gibson company with headquarters in this city.

Mr. Taufenbach will make his office at 201 North Wells building here.

**G-E Salesmen Study
Air Conditioning**

By George F. Taubeneck

SCHEECTADY—For four crammed weeks (Jan. 14 to Feb. 9) a squad of dealers' salesmen went to school up here, and learned the fundamentals of air conditioning. Conducted by the General Electric Air Conditioning Institute, this sales engineering school gave 167 dealers' men an extraordinarily intensive and comprehensive course on air-conditioning theory and practice.

Purpose of this school was that of training the 167 dealers' sales engineers so that they might be able to handle correctly the survey, calculation, and design of an air-conditioning system—with only general guidance from G-E engineers—and then sell the system to prospects against competitive proposals.

To attain this purpose the course has stressed the construction, performance, proper application, and sales engineering features of the various General Electric air-conditioning products. Students have been given the necessary "tools" with which to work, and an intimate knowledge of their use.

Those attending the school were required to enroll for a full-time course lasting the entire four weeks.

Sleeping quarters, meals, study, and recreational facilities were provided.

Schedules were arranged so that

(Concluded on Page 20, Column 1)

(Concluded on Page 4, Column 1)

**Frigidaire Adds
Conveniences to
Smaller Models****16-Model Line Ranges in
Price from \$79.50
To \$534.50**

NEW YORK CITY—Before the biggest crowd of dealers ever assembled by Frigidaire in the New York territory, the 1935 Frigidaire refrigeration lines were shown at the Waldorf-Astoria hotel here Feb. 6 by a large party of factory officials under the leadership of President E. G. Blechner.

Led by H. W. Newell, vice president in charge of sales, Frank R. Pierce, sales manager, and J. T. Collins, manager of the New York district, the convention crew proceeded to demonstrate the products and present 1935 sales campaign plans by means of dramatic skits, playlets, talking motion pictures, and old-fashioned oratory.

The 1935 Frigidaires come in four series comprising 16 models, ranging in size from the 2.1-cu. ft. Koldchest to the deluxe model with 15 cu. ft. of storage space.

Prices range from \$79.50 to \$534.50, delivered and installed, in the first zone.

Sizes, designations, and zone 1 prices of the line are:

Standard series—4-35 (4.1-cu. ft. net storage space), \$119.50; 5-35 (5.2 cu. ft.), \$149.50; 6-35 (6.1 cu. ft.), \$183.

Master series—4-35 (4.1 cu. ft.), \$134.50; 5-35 (5.2 cu. ft.), \$163; 6-35 (6.1 cu. ft.), \$199.50; 8-35 (8.1 cu. ft.), \$239.50.

Super series—5-35 (5.2 cu. ft.), \$184.50; 6-35 (6.2 cu. ft.), \$224.50; 7-35 (7.1 cu. ft.), \$259.50; 9-35 (9.1 cu. ft.), \$309.50; 12-35 (12.1 cu. ft.), \$374.50; 15-35 (15.1 cu. ft.), \$466.

Deluxe series—WP-18-35 (18.3 cu. ft.), \$518; 12-35 (10 cu. ft.), \$431.50; 15-35 (13.1 cu. ft.), \$521.50.

An apartment house model, known as model D-3-35 of 3.1-cu. ft. net storage space, is priced at \$99.50 in the first zone.

Outstanding feature of the Frigidaire '35 line, the Super Freezer, will (Concluded on Page 4, Column 1)

**Quintuplet's Parents Get
Grunow Refrigerator**

CHICAGO, Feb. 7—(Special Wire to the News)—Last night at a party given at the Chez Paree to the world's most famous father and mother, Mr. and Mrs. Dionne, parents of the Dionne quintuplets, Jim Davin (on behalf of William Grunow) presented them with a "Grunow super-safe Carnene vacuum system" electric refrigerator to keep the milk and food of the quintuplets always in perfect condition. The Dionnes are here in Chicago fulfilling theatrical engagements.

Those attending the school were required to enroll for a full-time course lasting the entire four weeks. Sleeping quarters, meals, study, and recreational facilities were provided.

Schedules were arranged so that

(Concluded on Page 20, Column 1)

(Concluded on Page 4, Column 1)

Universal Cooler Board Selects a Seasoned Refrigeration Executive

F. J. Gleason, secretary of Universal Cooler Corp., with F. S. McNeal (right), newly elected general manager of the company (see article in column 1). When the News was founded Mr. McNeal was one of the first subscribers. A visit to the News was his first official act last Saturday after becoming manager of Universal Cooler.

**Thomas Evans Is Elected
Chairman of Household
Section of Nema****Division Forms Two Sections; Technical Committee to
Handle Municipal Codes; Condenser Ratings Approved**

By George F. Taubeneck

NEW YORK CITY—Thomas Evans, president of Merchant & Evans, was elected chairman of the Household Refrigeration Section of the National Electrical Manufacturers Association at that body's annual meeting here last week. Mr. Evans, whose company manufactures M & E refrigerators in Philadelphia, succeeds Geoffrey M. Johnston, deceased. Until the meeting last

week there was but one refrigeration section of Nema. Henceforth there will be two—household and commercial.

No chairman for the latter division has been elected as yet, but it is presumed that one will be chosen at the next meeting of the two refrigeration sections, which has been scheduled for March 26 at the Carter hotel in Cleveland. Apex Electrical Mfg. Co. will be host.

Manufacturers of household electric refrigeration equipment will comprise the Household Refrigeration Section of Nema, while members of the Commercial Refrigeration Section will include manufacturers of "commercial refrigeration utilizing compressors designed to be driven by motors of less than one (1) hp., including, but without limitation, water coolers, beverage coolers, room coolers, and ice cream cabinets."

The technical committee of the refrigeration sections was authorized

Nema Chairman

THOMAS EVANS

**Kelvinator Ships 17,479
Units in January**

DETROIT—January shipments to customers by Kelvinator Corp. totaled 17,479 units, and were 43 per cent ahead of shipments for the corresponding month of 1934. H. W. Burritt, vice president in charge of sales, reported last week.

"Early sales results indicate that 1935 will be a good year for the sale of commercial refrigeration and air-conditioning equipment," Mr. Burritt said.

**Refrigerator Taxes Gain
In December, 1934**

WASHINGTON, D. C.—Excise taxes paid by manufacturers of mechanical refrigerators in December totaled \$144,517, reports the Bureau of Internal Revenue.

Collections in December, 1933, amounted to \$127,186.

Resolution of Sympathy

Members of the Refrigeration Division of Nema, present at the mid-winter convention in New York City last week, unanimously passed the following resolution:

"WHEREAS: The Refrigeration Division of the National Electrical Manufacturers Association has suffered an irreparable loss in the recent death of its honored and well beloved Chairman, Geoffrey M. Johnston, who served long, faithfully, and with remarkable astuteness to cement friendly unity among members of the industry; and

"WHEREAS: We here today mourn deeply the departure of one who was our friend, companion, guide, and counsellor,

"BE IT RESOLVED: That the members of the Refrigeration Division of the National Electrical Manufacturers Association in meeting assembled express their profound sorrow over his death, and

"BE IT FURTHER RESOLVED: That a copy of this resolution be sent to Mr. Johnston's bereaved family with our sincere sympathy for their great loss."

to handle any matters which may arise with reference to municipal refrigeration codes.

Without further authorization from Nema, this committee may "hop onto the job" as soon as the civic authorities of any municipality decide to tinker with the provisions of their ordinance regulating the installation and maintenance of refrigeration systems within the city's environs.

Approved was a new rating for condensers devised by a joint committee from Nema, the American Society of Refrigeration Engineers, and the Refrigerating Machinery Association. This new rating has already been certified by the latter two bodies. It now becomes a "Nema recommended practice."

Those who attended the meeting of the refrigeration section included: R. J. Strittmatter of Apex Electrical Mfg. Co., Lewis Crosley of Crosley Radio Corp., E. G. Blechner of Frigidaire Corp., T. K. Quinn and George Chapman of General Electric Co., Charles Gibson of Gibson Electric Refrigerator Corp., J. A. Harlan of Kelvinator Corp., H. I. Burritt of (Continued on Page 12, Column 1)

**Oil Burner Association to
Meet in April**

ATLANTIC CITY, N. J.—The annual meeting of the American Oil Burner Association will be held the second week in April in this city.

Crosley Distributors Name New Dealers

CINCINNATI—Appointment of five dealers for Crosley electric refrigerators and radios has been made by distributors in Dayton, Ohio, Springfield, Mo., and Denver.

In Dayton, the Dayton Furniture Co. was appointed by the Burns Radio Co., Crosley distributor.

Electrical Equipment Co. and Nelson Furniture Co. will handle the Crosley line in Springfield, Mo., following selection by W. T. Noss of Baldwin & Rogers Hardware Co., distributor.

J. T. Coon is in charge of radio and refrigerator sales for the Electrical Equipment Co., and Frank Nelson for the Nelson Furniture Co.

New Denver dealer is the Hatch Music Co. In Colorado Springs, Fred Davis Furniture Co. has been given the Crosley franchise.

The radio and refrigeration sales of the store are under the direction of John Maker.

12 Oil Burner Dealers Named by Kelvinator

DETROIT—Kelvinator Corp. recently appointed 12 new dealers for its oil burner in Massachusetts as follows:

George T. Davidson, Winchester; Parke-Snow, Inc., Somerville; Parke-Snow, Inc., Waltham; Parke-Snow, Inc., Roslindale; Robinson Home Utilities, Quincy; Dewey Radio Co., Boston; Blue Hill Spring Water Co., South Boston; Metropolitan Refrigerator Co., South Boston; Sorenti Brothers, South Boston; William Patterson, Ipswich; Raftow Products Co., Worcester; and Treadwell Electric Co., Worcester.

York Executive



ELMER A. KLEINSCHMIDT
Recently elected vice president
of York Ice Machinery Corp.

400 Attend Collins Co. Meeting in Boston

BOSTON—Approximately 400 dealers attended the meeting of the George Collins Co., Crosley distributor, held at the Kenmore hotel here recently. David C. Rockman, general manager of the Collins company, was chairman of the meeting.

Neil Bauer, field sales manager of Crosley Radio Corp., presented the 1935 line of Crosley electric refrigerators and radios, and outlined the merchandising program for the year.

N. Y. Housing Show Plans Formulated

NEW YORK CITY—The Greater New York Better Housing, Home and Building Modernization Exposition, sponsored by the New York City Better Housing Committee of the Federal Housing Administration, will be held during the week of March 25.

The exposition will be under the direction of Harry D. Phillips. Members of the exposition management committee are: Peter Grimm, honorary chairman; Gates Ferguson, director for the New York City district; A. Lincoln Bush; Herbert L. Carpenter, William A. Hart, A. E. Horn, Lee Kelley, Mrs. Malcolm Parker MacCoy, Ralph Neumuller, Charles C. Platt, Langdon Post, and David Sutton.

Educational demonstrations and exhibits of air conditioning, electric and gas appliances, heating and ventilation, lighting, decoration, plumbing, and painting will be given.

Prizes such as an automobile, electric refrigerators, electrical appliances, paints and varnishes, etc., will be awarded daily.

Norge Dealer Has Own Show at County Fair

ANDERSON, S. C.—Selling refrigeration via the "Big Top" was a recent sales activity of the Lucas-Kidd Norge Co., which chartered a tent for a Norge exhibit in conjunction with the Anderson County Fair held here. Approximately 50,000 people attended the show during the week.

Featuring a free show as a drawing card, the company announced Norge models in black-outs between the acts.

Receipts from the sale of "broiled" hot dogs and hamburgers totaled \$156.

Institute Head



KURT R. GROENER
New managing director of the
Porcelain Enamel Institute

Keystone Appliances Adds New Personnel

HARRISBURG, Pa.—Two new members recently added to the sales promotion division of Keystone Appliances, Inc., General Electric distributor in Harrisburg, are Miss Alice Noon, home economist, and Charles M. Evans, Jr.

Miss Noon was formerly with the General Electric Institute at Cleveland. She will conduct cooking schools for the Keystone company's eight retail stores, and will be available to dealers and utilities.

Mr. Evans, who has been a retail salesman, a G-E dealer, and wholesale contact man for the Keystone distributorship, is now in charge of sales education. A training program will be given throughout the year, with specialized schools prior to campaigns or activities featuring seasonal merchandise.

At the close of each school all salesmen will be enrolled in the G-E LaSalle training course.

Georgia Power to Aid In Financing Plans

ATLANTA—Features of the Georgia Power Co.'s "Dealer Cooperative Plan for Electric Ranges and Electric Water Heaters," are as follows:

1) Financing of dealer's customer paper, if preferred, which means discounting of dealer's sales contracts, enabling him to obtain his money almost immediately.

2) Collection for dealer of customer accounts, thus saving him collection and bookkeeping expense.

3) Free wiring of customers' homes for electric ranges and water heaters sold by dealer.

4) Liberal servicing policy under which dealer may be relieved of servicing expense and responsibility.

5) General advertising designed to promote dealer sales of electric ranges and water heaters.

6) Free store and window display advisory services, and display material at actual cost.

7) Free services of home service representatives in conducting demonstrations for dealers and in making home calls.

8) Free services of experienced dealer representatives who will assist dealer in sales plans.

100 Dealers See Norge Line at Newark

NEWARK—One hundred dealers attended the Norge convention held here recently by B. & O. Radio, Inc., Norge distributor for the Newark territory.

Principal speakers at the meeting included: B. J. Oppenheim, president and general manager of the distributorship; John H. Knapp, vice president and general sales manager of Norge Corp.; M. G. O'Harrar, vice president and sales manager, range division, Norge Corp.; Ralph Beale, sales manager, oil burner division, Norge Corp.; Walter Seiler, president, Cramer-Krasselt Co.; Miss Betty Appel, director Norge home economics department; Harry Whittingham, secretary, Norge Corp.; and William Crawford, vice president of Commercial Credit Co.

Crosley Texas Dealers Meet in Dallas

DALLAS—Crosley distributor meeting held by the Dallas Electric Supply Co., Inc., at the Hotel Adolphus recently was attended by approximately 125 dealers.

H. B. Green, president of the company, was in charge of the meeting. H. L. Roper, Crosley district manager, presented the 1935 lines.

Sparton Prices Given At Detroit Meeting

By T. T. Quinn

DETROIT—Sparks-Withington's 1935 line of Sparton electric refrigerators and radios was shown to 175 dealers and salesmen of the Detroit area Feb. 5 at a dinner meeting given by Wilks Distributing Co., local distributor.

Upton S. Wilkinson, secretary-treasurer and manager of the distributor's office here, was in charge of the meeting.

The new Sparton refrigerators were introduced by Harley Wall, of the Sparks-Withington refrigeration department at Jackson, Mich. Mr. Wall emphasized the fact that dealers no longer need to "romance" electric refrigeration, and urged that units be sold, not as mechanical novelties, but as domestic cold storage plants.

Convenience features of Sparton's Baskador, Handishelf, and Vegabin, available on higher-priced models, was brought out, and the company's "no big price jump" policy cited as an added reason why dealers should have increased success in merchandising the more expensive jobs.

Retail prices in the Detroit area range from \$119.50 for the 4.6-cu. ft. model to \$269.50 for the 9-cu. ft. model, finished in Sparlac. Individually, the prices run:

4.6-cu. ft. model (with raised base and Baskador, two compartment Vegabin, and interior cabinet light as extra conveniences), \$139.50; 5.2-cu. ft. model, \$164.50; 6.1-cu. ft. model, \$194.50; 7.4-cu. ft. model, \$224.50; 9-cu. ft. model, \$269.50.

All models from 5.2 cu. ft. up have the closed evaporator, Baskador, Vegabin, and interior light. The three larger units carry the anti-frost clock.

The four large models are also available with porcelain exterior finish in the PD series. Prices on this series start at \$191.50 for the 5.2-cu. ft. model, with the 6.1-cu. ft. unit selling for \$226.50, the 7.4-cu. ft. unit for \$259.50, and the 9-cu. ft. unit for \$299.50.

A. T. Haugh, general sales manager for Sparton, outlined the company's advertising program for the year, chief features of which are a 13-week radio series, starting February 10 over an NBC network, and an intensive newspaper campaign, to get under way soon.

Much of the western division's newspaper advertising will be concentrated in the Detroit area, Mr. Haugh said.

Ray Fowler, of the United States Advertising Corp., Toledo, next displayed blow-ups of planned advertisements, duplicates of which will be sent to dealers to assist them with their local sales.

The campaign will total from 12,000 to 15,000 lines, reaching a market of from 225,000 to 350,000 readers every week for three months, through leading Detroit dailies. First advertisement in the series will appear Feb. 24, and all will play up Sparton features, with the slogan, "Buy by the Clock," tied into the campaign.

Mr. Fowler invited dealers to submit their selling problems to his agency, so that advertisements might be worked out to meet all of the selling situations.

Mr. Haugh also introduced the 1935 Sparton radio series, in connection with which a 15-minute electrical transcription of the program broadcast from New York during the distributors' meeting in Jackson recently, was presented.

Sparks-Withington factory officials present at the meeting, in addition to Mr. Haugh and Mr. Wall were: Harold Johnson, treasurer; Guy C. Core, advertising manager, and J. J. Lynch, service manager.

Lawrence Robinson, C. C. Sheets, and Joseph Thompson of the Wilks Co. assisted Mr. Wilkinson at the showing. The Wilks Distributing Co. has warehouses in Jackson and Saginaw, and retail stores in those two cities and Flint.

Cooper Louisville Co. Appoints 3 Dealers

LOUISVILLE—The Wurlitzer Co., Bomar Summers Co., and Weis Outfitting Co. have been appointed Crosley dealers by Cooper Louisville Co., Crosley distributor for this area, J. E. Johnson, president, announced recently.

Mr. Tamm is in charge of the department for the Wurlitzer Co.; Mr. Schiele for Bomar Summers Co.; and F. Weis for Weis Outfitting Co.

Thompson Resigns From Post with Dartnell

CHICAGO—Douglas E. Thompson, who for the past five years has been contest director of the Dartnell Corp., has announced his resignation, effective Feb. 1.

He has produced contest activities for many refrigeration companies, including General Electric, Westinghouse, Norge, and Servel.

Stay in business WITH LEONARD

Stop and think a moment! Where are the refrigerators of only yesterday? Names that burst and flared like a bombshell . . . and passed away just as quickly?

So, if you're considering a new refrigeration franchise, take a tip from the past. Be sure to choose one that will last. That will become more and more valuable as the years go by.

For over 54 years the Leonard name has meant quality and reputation in refrigeration. During these years, it has built for itself a tremendous acceptance among dealers and on the part of the public alike. Leonard is firmly entrenched. Leonard offers you something to build on. The Leonard is a franchise you can justly count on passing down to your son.

BIG FUTURE FOR REFRIGERATION—Reliable authorities predict the sale of 1,750,000 units in 1935! Undoubtedly this year will see the greatest sales acceleration ever experienced by the industry. This conforms with the history of other major appli-

cances when reaching the degree of customer acceptance now enjoyed by refrigeration. Dealers with a proved, recognized line will be sitting in the golden seat. Ready to reap full benefit from this buying wave.

BOUGHT BY MASSES—Refrigeration has passed from the so-called "class" market. It is now being bought by the "masses." The Leonard line has been designed and engineered for this market. It is priced to appeal to them. Advertising and sales promotional plans aim right at this huge mass market.

GET LEONARD FACTS—If you want a refrigeration franchise that will increase in value . . . that will maintain your reputation in your locality . . . that will help you get your share of the refrigerator buying wave . . . that is keyed to mass sales . . . that will let you sell at a profit . . . then investigate Leonard now. Write or wire to-day. . . . LEONARD REFRIGERATOR COMPANY, 14256 Plymouth Road, Detroit, Michigan, and London, Ontario, Canada.

(754)
**THE COMPLETE
REFRIGERATOR**

LEONARD

"... his franchise
has the PLUS
values that mean
permanent profits
for a dealer"

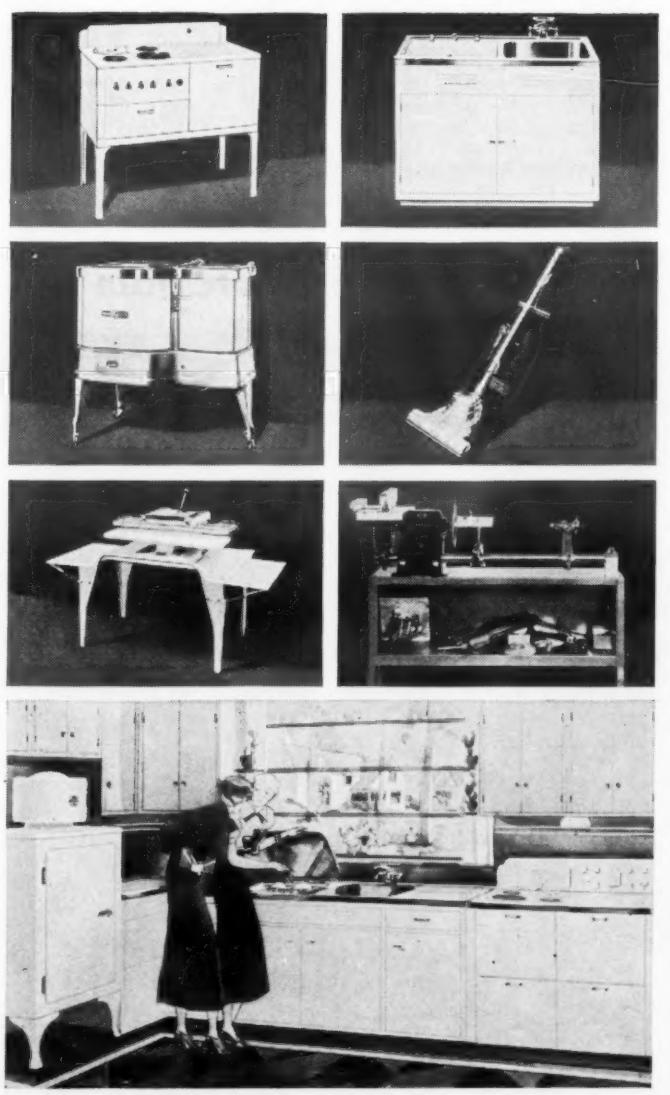


REFRIGERATOR AUTHORIZED DEALER



GENERAL ELECTRIC

manufactures the only
complete line of household
electrical appliances



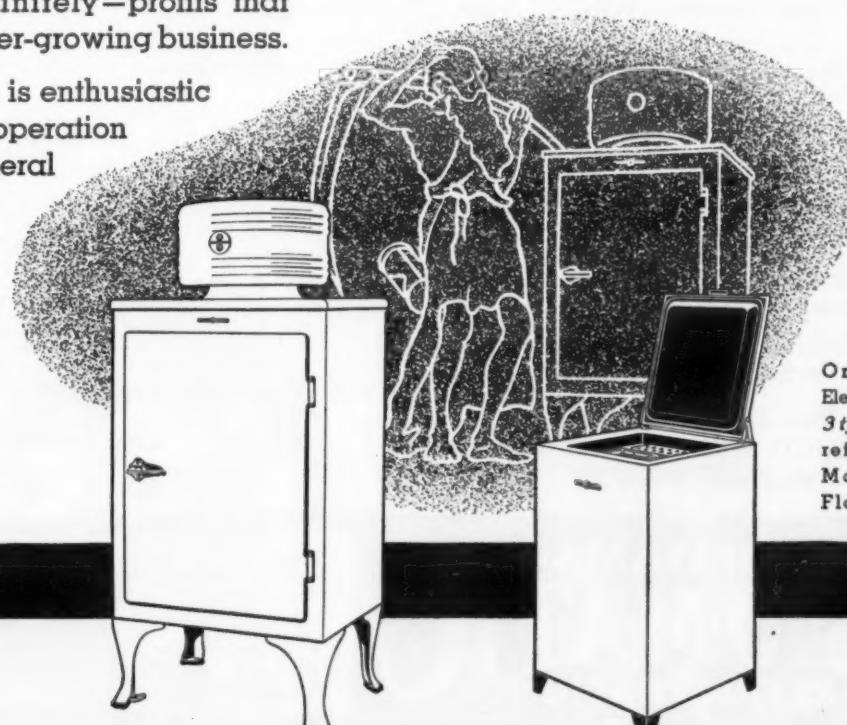
The G-E refrigerator dealer has the backing of the greatest name in electricity—the priceless advantage of handling a complete line of electrical home appliances—the benefit of enthusiastic satisfied customers who readily recommend the G-E to friends and who are preferred prospects for other G-E appliances.

FOR fifty years General Electric has led the way to the new age of electrical living. Now the day of the all-electric home is here. And General Electric is the only manufacturer offering a complete line of electrical household appliances. The General Electric refrigerator dealer has the plus advantage of selling to his refrigerator customers other G-E appliances that go into the all-electric home. He makes a worth-while profit on each sale—profits that go on indefinitely—profits that give him a permanent, ever-growing business.

The G-E refrigerator user is enthusiastic about the dependable operation and economy of the General Electric. Its performance

record has never been equalled by any other refrigerator. Every G-E Refrigerator owner is wide open to approach on other General Electric Kitchen and Laundry appliances.

Aggressive dealers who recognize the plus values in the G-E franchise are invited to wire or write for complete particulars. General Electric Co., Specialty Appliance Sales Dept., Section DF21, Nela Park, Cleveland, Ohio.



Only General
Electric makes all
3 types of electric
refrigerators—
Monitor Top,
Flatop, Liftop.

Frigidaire '35 Line Has Added Features In Smaller Models

(Concluded from Page 1, Column 3) be stressed in all advertising copy, sales promotion material, and selling technique, said Frank R. Pierce, sales manager.

The 1934 features have been retained, and on the super and deluxe series have been supplemented by a "cold freeze switch," by which a housewife may speed the freezing of ice and desserts, then have her refrigerator return to its former operating schedule automatically.

This switch has been made a part of the cold control.

In the standard series, a new cold control, interior light, utility basket, and hydrator have been added for the first time on models of this price class.

The master series models also have hydrators and sliding utility baskets, larger models being equipped with two hydrators.

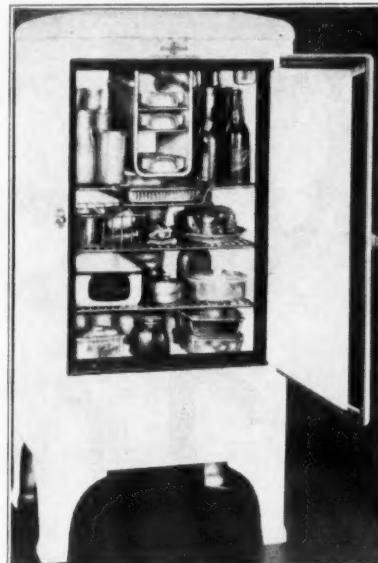
To dramatize the super freezer, Frigidaire sent men into Death Valley, Imperial Valley, the valley of the Rio Grande, the Colorado near Boulder City, and other hot spots of the nation, where daily temperatures ranged from 110 to 125° F.

These conditions were reproduced in Frigidaire testing rooms, and much of the company's advertising is centered around Frigidaire's performance record under these temperatures.

The campaign was opened Feb. 10 with three-page color spreads appearing simultaneously in *Saturday Evening Post*, *Ladies' Home Journal*, *Collier's*, *Woman's Home Companion*, and *Good Housekeeping*.

First page announced that Frigidaire was on its fourth million in

Standard Model



New features on Standard models include utility basket, hydrator, cold control, and interior light.

production, and the second and third pages show representative models of the four series against a maroon background, and a panel across the bottom with eight pictures illustrating outstanding features.

Follow-up advertisements in the same publications will carry full pages in color, illustrating the super model, and a story, "On the Banks of the Rio Grande," telling of the super freezer's operation under extreme weather conditions.

Newspaper advertising will be of three types—straight merchandising copy carrying dealer signatures and featuring the super freezer; copy tell-

Specifications of Frigidaire's 1935 Models

Model No.	Standard			Master			Super			Deluxe			WP	Hold-	
	4-35	5-35	6-35	4-35	5-35	6-35	8-35	5-35	6-35	7-35	9-35	12-35	15-35	18-35	chest
Overall Dimensions (in.)															
Height	49 $\frac{1}{2}$	52 $\frac{1}{2}$	55	53	55 $\frac{1}{4}$	57 $\frac{1}{4}$	60 $\frac{1}{2}$	56 $\frac{1}{4}$	58 $\frac{1}{4}$	60	63	63 $\frac{1}{4}$	65	63 $\frac{1}{4}$	65
Width	24	25	26 $\frac{1}{4}$	24	25	26 $\frac{1}{4}$	30	24 $\frac{1}{2}$	25 $\frac{1}{4}$	28	31 $\frac{1}{2}$	38 $\frac{1}{4}$	46 $\frac{1}{4}$	35 $\frac{1}{4}$	46 $\frac{1}{4}$
Depth	23 $\frac{1}{2}$	25 $\frac{1}{4}$	25 $\frac{1}{4}$	22 $\frac{1}{2}$	24 $\frac{1}{4}$	24 $\frac{1}{4}$	26 $\frac{1}{4}$	25 $\frac{1}{4}$	26 $\frac{1}{4}$	27	27	30	30	30	28 $\frac{1}{2}$
Storage Capacity															
Net food storage (cu. ft.)	4.1	5.2	6.1	4.1	5.2	6.1	8.1	5.2	6.2	7.1	9.1	12.1	15.1	10.0	18.3
Total shelf area (sq. ft.)	8.4	10.4	13.4	8.4	10.0	13.0	16.7	10.0	12.4	15.6	17.9	24.6	29.4	19.6	33.8
Ice Cube Trays															
No. of trays	2	3	3	3	3	3	6	3	3	6	6	6	6	6	2
No. of cubes	41	62	62	60	72	72	120	72	72	120	120	156	208	156	36
Weight of cubes (lbs.)	4	6	6	7 $\frac{1}{4}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	14 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	14 $\frac{1}{2}$	14 $\frac{1}{2}$	19	25 $\frac{1}{2}$	19	20 $\frac{1}{4}$
Retail Price															
(Zone 1)	\$119.50	\$149.50	\$183	\$134.50	\$163	\$199.50	\$239.50	\$184.50	\$224.50	\$259.50	\$309.50	\$374.50	\$466	\$431.50	\$521.50
															\$79.50

ing the fourth million story; and full-page copy of only 65 words, with illustration carrying the Frigidaire name in box-car letters and an arrow pointing to the Frigidaire crest.

This theme will also be carried out in billboard advertising across the nation.

The cooperative basis in advertising—with dealer and Frigidaire Corp. splitting the costs 50-50—worked out so well last year that the fund has been increased for 1935, Sales Manager Frank R. Pierce said.

It is estimated that 1,000 daily papers and hundreds of weeklies will be used under the increased schedule.

"Best estimates obtainable are to the effect that 1935 electric refrigeration sales will reach the huge total of \$300,000,000," said H. W. Newell, vice president in charge of sales, at the dedication of the 3,000,000th Frigidaire, at the Moraine, Ohio, plant, Feb. 11.

"It is a sincere belief in these prospects that justifies the expenditures Frigidaire has contracted for in advertising, product-development, and sales plans.

"Our estimates of the situation lead us to forecast that sales between now and July 1—the peak selling period

will reach \$185,000,000. We believe that first quarter sales will be heavier than ever before. People are going to be prepared for hot weather."

"Before our 1935 plans began to crystallize, we went into the field to obtain from users, prospective electric refrigeration buyers, our own dealers, salesmen, and newspapers, their ideas for 1935 products. All told, more than 100,000 homes, affecting more than 400,000 persons, were interviewed.

"We asked the questions: 1. What will buyers of refrigeration want in 1935? 2. Where are those buyers? 3. How can they best be reached?

"On the basis of facts learned, we built our 1935 products and our advertising and sales program for the year. These facts are woven into the product design, the sales appeal, the advertising copy, and advertising media, the sales methods, and sales activities and merchandising strategy."

E. G. Biechler, president and general manager of Frigidaire Corp., and Carl A. Copp, general sales manager, were also present when the 3,000,000th Frigidaire rolled off the assembly line.

These two men were in the original group which began the development of Frigidaire under Delco-Light sponsorship in 1920.

Other officials present included W. F. Armstrong, vice president and assistant general manager; Mr. Newell; E. R. Godfrey, works manager; E. B. Newill, chief engineer; and Frank R. Pierce, sales manager.

Merchandising Stunts

Sensational merchandising stunts are being developed to bring showroom traffic into the stores of Frigidaire's 3,500 major appliance dealers, department and furniture stores, and public utilities.

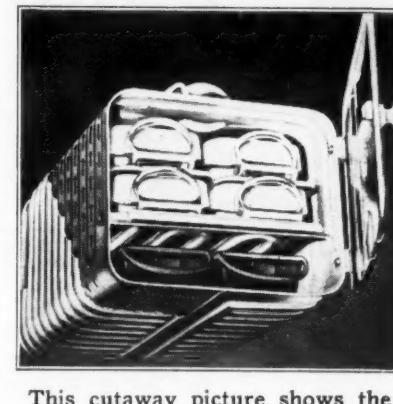
Sales promotion materials include an attractive 40-page selling album designed so salesmen may leave it with prospects for study; direct mail pieces, door-openers, demonstration kits with cutaway super freezers, the porcelain demonstrating devices, and other paraphernalia originated to make life easier for salesmen.

Window displays feature the fourth million and the super freezer, and will appear simultaneously across the continent. Showroom demonstrations, demonstration panels to assist floor attendants, and other promotional features have been sent dealers.

Included is a detailed plan-book for the Frigidaire announcement campaign, containing an outline of the early season advertising program, a facsimile of the three-page announcement advertisement, and suggestions for sales contests to stimulate early-season merchandising.

Suggested contests include the "thirty-fivers," with prizes for salesmen who sell 35 refrigerators within a given time, and rewards for the first sale in each series, leaders in demonstration appointments, first sale of any model, first sale of any series, first sale each week, and first in volume of sales during the announcement period.

Freezer Construction



This cutaway picture shows the way in which refrigerant flows through the super freezer. Also shown are the handles on the ice tray releases.

The private "preview" for selected prospects is also being stressed as a leading means of beating the field to the "early bird" buyers.

Dealers are being urged to stage their "previews" early, display a full line of merchandise with ample delivery stocks, utilize all possible tie-ups with national magazine, newspaper, and radio advertising, line up prospects early for the spring peak season, and train and equip salesmen in the new Frigidaire line.

Another sales help offered in connection with the 1935 Frigidaire is the users' experience report, listing the customer's own estimate of the money her Frigidaire has saved her through the elimination of food spoilage, bargain specials and quantity buying, and the cost of the present refrigeration as compared with the usual monthly ice bill.

Salesmen may have the housewife fill in the report, insert in their sales manual, and use it in their talks with prospective buyers.

Presentation of the Frigidaire '35 line and merchandising plan to the 19,000 men in the national organization is in the hands of four factory groups, headed by Frank R. Pierce, sales manager, W. D. McElhinny, commercial division manager, H. J. Walker, Jr., public utility division manager, and Lee A. Clark, sales planning manager.

Dealer-distributor meetings will be held in the following cities:

Miami, Fla.; Atlanta; Roanoke, Va.; Norfolk, Va.; Baltimore; Boston; New York City; Philadelphia; Rochester, N. Y.; Cincinnati; Chattanooga, Tenn.; Memphis; Indianapolis; St. Louis; Chicago; Detroit; Pittsburgh; Cleveland; San Antonio, Tex.; Houston, Tex.; New Orleans; Dallas; Oklahoma City; Wichita, Kan.; Omaha; Sioux City, Iowa; Kansas City; Des Moines.

Denver; Salt Lake City; Los Angeles; San Francisco; Portland, Ore.; Seattle; Spokane, Wash.; Billings, Mont.; and St. Paul-Minneapolis.

Demonstration on Porcelain



Closeup of a Frigidaire Super series model, showing new horizontal cabinet lines and demonstrating that the porcelain finish is impervious to the effect of grease.

THERE'S permanent profit in featuring merchandise you can fearlessly recommend.

Ice-O-Matic is built—not just assembled—by the makers of Oil-O-Matic—the world's fastest selling oil burner. Ice-O-Matic is powered by the famous Williams Capacitor (brushless) type motor—developed and built in the Williams factories. No pains are spared to make Ice-O-Matic mechanically superior.

Two brand new lines—the De Luxe line for those who accept only the best there is—and a distinguished new line of quality refrigerators for the popular-priced field—make every refrigerator prospect an *Ice-O-Matic* prospect. The aristocratic new Ice-O-Matics are up-to-the-minute in their striking beauty—incorporating every special feature your customers want.

Ice-O-Matic has back of it the tremendous resources of the world's greatest concern specializing exclusively in the control of temperature. The companion line of commercial Ice-O-Matic refrigeration meets the needs of grocers, butchers, restaurants, hospitals, dairies with a complete range of compressor sizes at attractive low prices. Also a most complete line of Milk Cooling and Truck Refrigeration equipment. Another Williams product, Air-O-Matic, brings Williams performance to the air conditioning field.

A letter or telegram will bring full details of the Ice-O-Matic Distributor's franchise arrangement.

Ice-O-Matic Refrigeration Division
WILLIAMS OIL-O-MATIC HEATING CORP.
Bloomington, Illinois

WILLIAMS ICE-O-MATIC
REFRIGERATION

WILLIAMS OIL-O-MATIC HEATING CORP.
Ice-O-Matic Division, Bloomington, Ill.
Please send me full details of the 1935 Ice-O-Matic line and franchise.
Name _____
Address _____
City _____
Present Address _____

E. R. N. 2-5

IF YOU HAVE AN EYE FOR SALES APPEAL

keep it on Westinghouse in 1935!

News flashes from Westinghouse Refrigeration Headquarters herald sensational new line, new selling features, tremendous new promotion plan! Mail coupon for advance inside information!

FLASH!

New streamline beauty...new dial temperature selector...new button-touch door latch.

FLASH!

New revolving shelf gives amazing convenience and increases the accessible storage space!

FLASH!

New kind of all-metal ice tray ejects ice cubes automatically...no fussing at the sink!

FLASH!

New special compartments for salad greens, fruits, vegetables and all kinds of dairy products!

FLASH!

Greater economy and dependability than ever in the famous hermetically-sealed mechanism!

FLASH!

Gigantic new advertising and sales promotion program to reach every prospect in America!

● Stop! Look! Listen! The big 1935 Westinghouse sales parade is on the way! With a complete new line, new selling plans, new ways for YOU to sell MORE refrigerators and make MORE profit than ever before! Right NOW is the time for you to investigate and plan to get in on this greatest year in Westinghouse history! Detailed announcement will be made March 1st, but the coupon below will bring you complete advance information...IMMEDIATELY. Get all the facts and figures that back up these headline news flashes! Don't hesitate...mail the coupon TODAY!



*Mail
coupon now!*

for a complete pre-view of
the 1935 Westinghouse Re-
frigerator line, features, ad-
vertising and selling plans!

Westinghouse

Streamline REFRIGERATORS

Westinghouse Electric & Mfg. Co.,
Refrigeration Dept. 42, Mansfield, O.

Rush us complete advance information on the 1935
Westinghouse Refrigerator plans.

Name.....

Address.....

PERSONALITIES

By George F. Taubeneck

Review of 1934

This is the fifth instalment of a short history of the electric refrigeration industry during the year 1934. First instalment was published in the Jan. 16 issue, the second in the Jan. 23 issue, the third, Jan. 30 issue, and the fourth, Feb. 6.

In the current instalment is told the story of personnel changes in 1934, which concludes the story of the year.

Personnel

Personnel changes in the industry during 1934 were, if anything, heavier than in previous years.

Expansions in many companies brought new men into the field in engineering, advertising, and executive capacities, and this coupled with the usual shifting of men already in the industry to new and better posts, made constant news throughout the year.

As the year opened, Kelvinator appointed PAULINE PEACOCK director of Kelvin Kitchen, research and administrative center of its home economics activities. She had been a member of the corporation's home economics department for two years.

Coincident with her appointment, the department's facilities were enlarged to permit Miss Peacock to direct more extensive research work in refrigeration and foods.

H. G. PERKINS, formerly an assistant to the president of Kelvinator Corp., in March was made a vice president of the company.

M. C. TERRY was appointed head of the commercial applications department of Kelvinator Sales Corp. in May to succeed JOHN WYLIE, who had a short time before been named general sales manager of Temprite Products Corp.

Late in February, DALLAS E. WINSLOW, president and treasurer of Copeland Refrigeration Corp., announced other officers of the organization as follows: vice president and secretary, J. R. MEYERING; assistant secretary and treasurer, F. B. McKAIG; general manager, H. O. SELTSAM; household sales manager, W. S. GRANT; commercial sales manager and head of the household

user's department, W. G. VON MEYER; chief engineer, E. C. HAIGHT; plant superintendent, J. W. JENKINS; purchasing agent, A. G. WATKINS; manager of service repairs, R. T. GMELICH.

Copeland staff appointments, announced in March, included naming of W. B. MUSE, formerly with the Leonard Refrigerator Co., eastern regional manager; R. G. BERG, formerly with Zerozone, as head of the order department; P. A. LOVEGREN, also of Zerozone, as assistant purchasing agent; and GEORGE LINDGREN as a member of the engineering department.

LOUIS RUTHENBURG, consultant to the Refrigeration Division of Nema, in March was elected president of Servel, Inc., replacing H. H. SPRINGFORD, who remained in an advisory capacity while devoting the majority of his time to other interests.

A. J. McGINTY, who had been assistant advertising manager of Electrolux Refrigerator Sales, Inc., New York City, was promoted in March to do sales education work among distributors in all parts of the country. This was occasioned by demand of gas utilities for assistance in training their salesmen in Electrolux selling.

I. R. RECHBOOK, formerly commercial manager of the Philadelphia branch of Servel, Inc., was promoted to general manager, succeeding WILLIAM DUHEY, who left to become head of the central control department of the Powers Accounting Machine Co.

FOWLER MANNING, at one time president of the L. C. Smith and Corona typewriter companies, was appointed director of the air-conditioning division of the American Radiator Corp., organized early in the year.

Assisting Mr. Manning in the American Radiator air-conditioning department were GEORGE R. ATHERTON, who had been assistant general sales manager of the American Radiator Co., and FRANK B. STUBBS, who had been in charge of the bureau of air conditioning set up by the company for its preliminary experiments.

H. B. SMITH in January was appointed in charge of gas furnace sales activities of the merchandising division of the air-conditioning department of General Electric, with offices in New York City.

PAUL A. HUNKER, who had been associated with R. Cooper Jr., Chicago G-E distributor, was appointed water cooler specialist for the commercial division of General Electric's refrigeration department in Cleveland.

T. B. TERRY, for three years chief inspector of Gibson Electric Refrigerator Corp., was promoted in January to the position of production manager of the company, to replace C. M. BROWN, who resigned to become president and general manager of Household Products Corp., Hillsdale, Mich.

Early in April Mr. TERRY left Gibson to assume charge of the inspection department of Sparks-Withington Co., makers of Sparton electric refrigerators.

A. E. ALLEN was elected vice president of Westinghouse Electric & Mfg. Co. in charge of the merchandising division in Mansfield, which had been made an operation distinct from other divisions. His duties included supervision of all the division's sales, manufacturing, and engineering activities.

MARSHALL ADAMS, formerly sales promotion manager of the merchandising department of Westinghouse, was appointed to the same post with American Radiator Co.

GEORGE H. BUCHER, who had been with the Westinghouse organization since 1909, was elected president of the Westinghouse Electric International Co. at a meeting in May.

C. M. EAKIN, who had been managing the metropolitan New York operation for Frigidaire for more than a decade, announced his resignation from that company in February, and obtained an oil burner distributor's franchise of his own. He had seen the annual Frigidaire business in metropolitan New York grow from 800 to 50,000 units.

KEITH SAUNDERS in March was named wholesale sales manager of the Frigidaire factory branch in New York City.

FERDINAND J. BOMMER, JR., for 14 years associated with the Jewett Refrigerator Co., six of them as chief engineer, was named to that post in the Potter Refrigerator Corp. in January.

HARRY W. MCQUAID was appointed to the metallurgical staff of Republic Steel Corp. in January. Other changes in the organization's personnel included the transfer of HOWARD W. BURKETT from Youngstown to the post of metallurgical engineer at

Sparton Executives Snapped by Candid Camera



Three typical unposed poses of Capt. William Sparks, president of the Sparks-Withington Co. His son, Harry, vice president in charge of sales, may be seen in the dim background.



(1) Treasurer Harold M. Johnston and (2) Vice President Harry G. Sparks of Sparks-Withington are two very serious men these days as they map their campaign to put Sparton up among the leaders.

Buffalo, appointment of ELMER LARNED to a similar position in the Chicago district, and the acquisition of HAROLD C. BLAIR, metallurgical engineer, to specialize in tin plate products. EARL KAUTZ, ceramic engineer, joined the organization to specialize in research and field service on enameling sheets.

RICHARD B. MARSHALL, vice president and general manager of Electromaster, Inc., in Detroit, was elected president of the company at a directors' meeting in January, and GERALD HULETT, sales manager, was appointed vice president and a director.

C. M. CORY was named general sales manager for the Creamery Package Mfg. Co. in Chicago, being advanced from his position as manager of the Kansas City branch. H. T. HOWARD, manager of the Minneapolis branch, succeeded him in Kansas City, and GEORGE C. ANDERSON, former assistant branch manager, took over branch management of the Chicago office.

Department store activity of the Leonard Refrigerator Co. was placed under the supervision of J. J. O'NEIL, who managed the Leonard exhibit at A Century of Progress. He was a former new business manager for Refrigeration Discount Corp., which financed Leonard time payment sales.

A. D. McCAGHNA was given general management of Norge Corp. of New York, moving there from Detroit, where he had been associated with the Budd Mfg. Co.

WILL J. TAKES was appointed manager of the Chicago office of the Cork Insulation Co., early in March.

NORMAN R. EASTER was made superintendent in charge of the Dry-Zero insulation plant in Chicago to replace GALE T. PEARCE, who resigned to devote all of his time to the management of properties owned by him in Iowa.

Stewart-Warner directors, elected in March, included SIDNEY ADLER, R. J. GRAHAM, R. J. DUNHAM, JOSEPH E. OTIS, RALPH M. SHAW, ENGENE V. R. THAYER, and JAMES S. KNOWLSON.

R. H. ANDERECK in March was named vice president of Trane Co. in charge of engineering.

FRANK H. DEWAY, who had been sales manager of the Wood Hydraulic Hoist & Body Co., Detroit, retained that position following taking over of the business by Gar Wood Industries, Inc.

VERNON L. FRANK, former commercial sales supervisor for the Philadelphia branch of the York Ice Machinery Co., was named sales manager of the Ridgeway Refrigerator Co., manufacturer of commercial refrigeration equipment, Philadelphia.

H. S. RHEINER, former eastern regional manager for Trupar Mfg. Co., manufacturer of Mayflower refrigerators, in January was named eastern

laboring to sell the various components of the Grigsby-Grunow Co., resigned from that position in May. (He became refrigeration sales manager of Stewart-Warner early in 1935.)

GEORGE BALL of Muncie, Ind., whose Ball Mason jar manufacturing enterprises had made him a millionaire, was named chairman of the executive committee of General Household Utilities Co. in March, replacing J. CLARK COIT, who retired.

Kerotest Mfg. Co. in January announced two changes in its sales personnel. JAMES A. STRACHAN, district manager in the New York territory for the past two years, was named assistant sales manager of the brass division, with headquarters in Pittsburgh. KENNETH M. NEWCUM replaced Mr. Strachan in the New York territory. He had been associated with Zero Plate Corp., Chicago, and with the service departments of both Frigidaire and Kelvinator distributors in St. Louis.

C. H. GRANDSTAFF in February was appointed district supervisor in the merchandising department of the Chicago office of Carrier Engineering Corp., to assist dealers in promoting their air-conditioning and commercial refrigeration business. He had been regional sales manager for the Trupar Mfg. Co.

DOUGLAS ANNIN, who had been identified with the distribution of industrial process controls for the past 10 years, joined the staff of Minneapolis-Honeywell Regulator Co. in May.

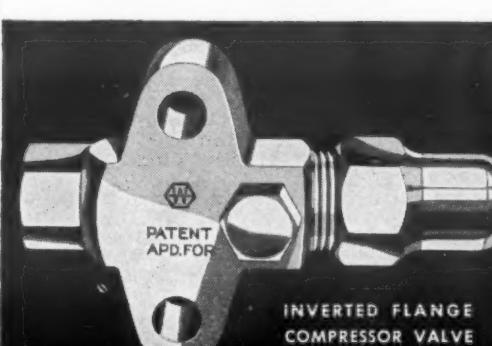
RALPH A. BARD, Chicago financier, was elected a director of Universal Cooler Corp. early in the year.

WILLIAM R. CLARK was named general manager of Temprite Products Corp., and GEORGE SHELDREICK elected to the position of vice president in charge of manufacturing, shortly after plans to step up production were announced in February.

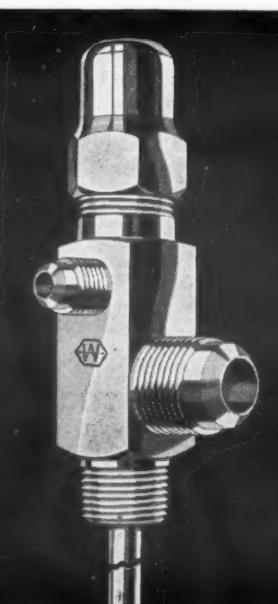
Early in May, JOHN WYLIE, formerly chief of the sales engineering department of Kelvinator, was appointed general sales manager of Temprite Products Corp.

In the Nema picture, W. J. DONALD, a former vice president and managing director of American Manufacturers Association, replaced A. W. BERRESFORD, who resigned, as managing director.

WEATHERHEAD COMMERCIAL REFRIGERATION FITTINGS



INVERTED FLANGE COMPRESSOR VALVE



S. A. E. RECEIVER TANK VALVE



INVERTED ANGLE SHUT-OFF VALVE

Made of hot extruded brass normalized to remove mechanical strains after machining—a more adaptable method of producing a finer fitting. This is a patented process resulting from long scientific investigation along the line of manufacturer demand. The result—high tensile strength product exactly suited to the most rigid requirements.

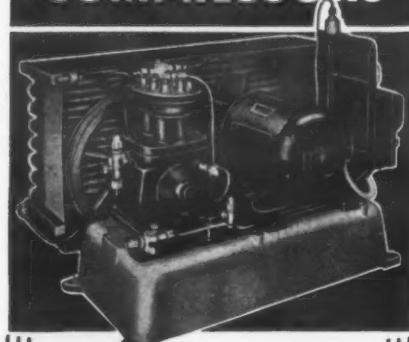
Weatherhead manufactures a complete line of fittings and valves in both S.A.E. and the more modern Patented Inverted type.

Equipped to make any special valve requirement, Weatherhead welcomes specifications for estimate. Representatives can be reached in all larger cities or write—

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646 FRANKFORT AVE., CLEVELAND, O.



COMMERCIAL AND HOUSEHOLD COMPRESSORS



A COMPREHENSIVE QUALITY LINE of Long-Proven Dependability. Meeting every requirement of the manufacturer or dealer in showcases, coolers, milk-cooling equipment, or air conditioning apparatus.

1/6 to 10 H.P.

AIR COOLED, WATER COOLED, AIR AND WATER COOLED

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Service companies and Assemblers are invited to write for SPECIAL PLANS.

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1934 ~ ~ ~ 1935

TEMPIRE



IT will undoubtedly be years before the full story of 1934 can be written and its significance made plain. To most of us, 1934 was a year of trying and testing, which absorbed the skill and energies of laboratories and factories to the utmost, in the endeavor to lay better foundations for better times. Day after day, intensive research and experimentation continued, until the goal of accomplishment was reached, and 1934 bequeathed to 1935 new designs, new efficiency and new values. The investment in time and money naturally took serious toll of the manufacturer, and some were unable to survive.

Though its achievements may appear small when compared with other outstanding attainments of the year, Temprite, as the World's Largest Exclusive Manufacturer of Beer and Water Coolers, is proud of the part which it has been able to play in the rebuilding program as it affects commercial refrigeration. It feels it has placed in the hands of its distributors and fixture manufacturers, an exclusive and outstanding product by which profit, value and customer satisfaction are assured.

It is a source of further gratification to realize that the addition of Temprite to the existing refrigeration line of many of these distributors has meant the success of their merchandising activities.

TEMPIRE PRODUCTS CORPORATION

Originators of Instantaneous

DETROIT



Liquid Cooling Devices

MICHIGAN

Niagara Hudson Reports Success In Plan for Aiding Dealers On Time-Payment Sales

By M. E. Skinner, Assistant Vice President, Niagara Hudson Power Corp.

THE recent entry of the Federal Government into the business of financing time sales of electric appliances through the Electric Home & Farm Authority has created widespread interest in the subject of better financing for domestic refrigerator sales. It has become increasingly apparent during the past few years that the customers' difficulty in financing the purchase of electric refrigerators is one of the greatest bars to greater sales.

This problem is important to refrigerator manufacturers as well as to dealers; and it assumes a major importance to the utility, particularly in the case where the utility does not itself sell merchandise.

Accordingly, when the Niagara group of companies discontinued the sale of appliances early in 1933, it was clearly recognized that a better finance plan for dealers would be absolutely necessary if a satisfactory volume of sales were to be maintained.

Some utility companies had solved this problem by arranging to carry time payment contracts for dealers and this possibility was naturally considered. However, a careful analysis of the situation indicated that there were some disadvantages to the company in this method of operation, and it was determined to seek some other solution.

Specifically, the company wished to:

1. Avoid the necessity of employing its own funds.

2. Avoid the responsibilities incident to passing on merchandise credits.

3. Escape from the necessity of serving as a collector (never popular) of other peoples' bills.

4. Avoid the responsibility of guaranteeing dealer accounts.

Several of the nationally known financing institutions were approached, and while they were interested, their experience with this particular type of business was so limited that they were very reluctant to depart from precedent established through motor vehicle financing.

Several possibilities were finally suggested, and Niagara Hudson companies offered to serve as an experimental laboratory in order to check the various ideas in actual field operation. In this way the finance company could satisfy itself before making commitments on a national scale.

Buffalo Experiment

Commercial Credit Co. evidenced willingness to try out some of these new ideas, and out of an extended series of conferences came the so-called "Economy Purchase Plan." This plan was tried experimentally in the city of Buffalo for over a year before it was made available in other localities.

When the EH & FA was setting up its program for financing dealer sales in the Tennessee Valley it was given full information in regard to the "Economy Purchase Plan." In the fol-

lowing description the reader will recognize many points of similarity between these two plans. Naturally, "Economy Purchase Plan" rates cannot be quite so low as under a plan where government funds are used at abnormally low rates of interest.

Cooperation Brings Savings

"The Economy Purchase Plan" is entirely cooperative, benefiting all concerned in the transaction—the appliance purchaser, the retailer, the refrigerator manufacturer (directly or through his wholesale representative), and the utility company.

Its purpose is simple—to increase market opportunities for the retailer, manufacturer, and utility by offering unusually favorable terms of purchase to the consumer. This is made possible by assigning to each of the co-operating parties the work, responsibilities, and services for which each is best fitted.

The following breakdown of functions illustrates how these economies are achieved.

Purchaser

Undertakes to pay instalments promptly.

Agrees that if slow or delinquent will pay something toward extra costs of handling.

Agrees to a firm collection procedure which will eliminate delinquencies of more than 30 days.

Retailer

Undertakes to see that details of plan are understood by the purchaser.

Undertakes to secure basic credit information.

Agrees to assist in collection effort if delinquencies develop.

Agrees to repossess the appliance and repurchase the account upon notice from finance company.

Utility Co.

Undertakes to call the merits of the plan to the attention of all dealers.

Assists in training dealers and dealers' salesmen in handling details of plan.

Makes available to finance company—

1. Local office space, office equipment and telephone facilities.

2. Access to means of quick checking credit information.

3. Machine accounting facilities for setting up records and preparing bills.

4. All facilities for receiving payments including branch offices.

Prepares and sends all statements of instalments due.

Prepares and sends past due notices.

Receives payments made within 20 days of due date.

Makes up monthly statements of volume of paper purchased, classified as to manufacturer.

Makes up annual statement of amounts outstanding, classified as to manufacturer.

Manufacturer

Undertakes to call the merits of the plan to attention of all dealers.

Assists in training dealers and dealers' salesmen in handling details of plan.

Protects finance company against loss due to any repudiation of repurchase liability on the part of manufacturers' dealers, by agreeing to repurchase repossessed refrigerators in such cases.

Finance Company

Furnishes contract forms, rate charts, etc.

Supplies competent personnel to administer plan.

Checks and approves all credits.

Negotiates all supporting agreements with manufacturers and retailers.

Purchases such eligible contracts as meet with its credit approval.

Furnishes all funds.

Handles all collections where payment is not made within 20 days of due date.

Furnishes monthly financial statement of income and expenses.

Agrees to a limited profit on the operation.

Agrees to appointment of advisory committee consisting of representatives of finance company, cooperating manufacturers, and utilities to advise as to best use and development of the plan.

Mutual Benefits to All

Each party receives benefits in return. The purchaser benefits through a lower finance charge, through the wider availability of credit from dealers, through the better purchase terms made possible, and through the convenience of making payments at the same time and place that the regular utility service bill is paid.

The retailer benefits in that the plan is available to him although he may have small net worth. This is possible, not only because primary dependence is put upon the purchasers' credit, but because the manufacturers back up the retailers' responsibility by a repurchase agreement.

Under such circumstances the finance company's requirements of a dealer can be more liberal than under standard plans. The retailer, of course, benefits from the widened market opportunity.

Increased Market

The manufacturer benefits from the increased market for his product, and the availability of a practical finance plan to dealers whose financial position would not justify the extension of a credit service to them under other circumstances.

The finance company benefits by being able to extend a better service at low cost, while still protected in a reasonable profit. The plan should secure for them a substantial volume of business which would not have otherwise existed.

Finally, the utility benefits from the increased appliance business, from the good will of customers who prefer to pay for appliances with their light bill, and from the appreciation of dealers who now have a favorable finance plan with which to handle time sales.

How the Plan Works

This plan, as tested for over a year in Buffalo, has demonstrated its soundness.

Announcement of it was first made at a mass meeting to which all dealers were invited. Representatives of the utility and the finance company explained the plan and indicated how the dealers could apply for and how they could use the plan. The utility issued a bulletin for all of its public contact employees and one for jobbers salesmen.

At that time there was some concern for fear that customers, put under pressure to pay, would take out their resentment on the utility, and great pains were taken to emphasize the limitations on utility company participation and responsibility. These fears proved to be groundless in subsequent experience with the plan.

The company display department prepared a show card for use in stores calling attention to the new plan and a bill stuffer was enclosed with all bills. Company sales promotion supervisors were thoroughly schooled in the details of operation of the plan and assisted in carrying the story to dealers.

The operation of this plan in Buf-

falo during 1934 facilitated the sale of 1,128 refrigerators, with a total dollar volume of over \$200,000. It should be borne in mind that this record represents a period in which the plan was being built up from zero to its present scope.

In addition to electric refrigerators, this plan was used to finance the sales of other appliances, such as washers, ironers, ranges, radio receivers, vacuum cleaners, oil burners, etc.

The following table gives pertinent information in regard to the operation of this plan in Buffalo during 1934.

No. of cooperating manufacturers as of Dec. 12, 1934.....	26
No. of cooperating dealers as of Dec. 12, 1934.....	110
Deals purchased	1,680
Dollar volume purchased	\$249,063.37
Average amount of accounts purchased	\$148.30
Deals rejected for credit reasons	276
Dollar volume rejected	\$31,597.74
Instalments billed	8,226
Second notices required	1,465
No. instalments paid gross	1,336
No. reinstatement fees paid	325
No. accounts repurchased by dealers	59
Dollar volume repurchased by dealers	\$6,723.62
No. accounts repurchased by manufacturers	2
Dollar volume repurchased by manufacturers	\$125.47
Accounts receivable outstanding as of Dec. 12, 1934	\$180,825.81

Further Details of the Plan

As the plan is operated in actual practice in Buffalo, the utility first signs an agreement with the finance company undertaking to do for them the things outlined above consisting principally of the preparation and mailing out of bills.

For these services it receives compensation at the rate of 10 cents per bill sent out, which just about covers out-of-pocket expense.

The finance company then secures agreements from the manufacturers whose refrigerators are in that manner made eligible for the plan.

How Plan Operates

The plan works very simply in practice. Any dealer having made application and having been accepted may use the plan in selling any refrigerator eligible by virtue of the fact that the manufacturer has signed a cooperative agreement with the finance company.

In negotiating his sale he quotes terms in accordance with the "Economy Purchase Plan" chart. He obtains the necessary credit information and submits it to the finance company by telephone or by mail.

Upon approval of credit he completes the transaction by making delivery of the refrigerator and submits the signed contract. Commercial Credit Co., after checking, turns the contract over to the utility company for billing.

As long as payments are made promptly this procedure continues

Unpaid Balance	Number of Monthly Instalments	Electric Home and Farm Authority Plan	Total Finance Charges (Net)	
			Economy Purchase Plan	Typical National Manufacturer Plan
\$ 50.00	6	\$ 3.22	\$ 5.26	\$ 7.00
100.00	12	7.04	9.02	13.04
100.00	18	10.52	14.12	19.16
150.00	18	14.16	17.76	19.02
150.00	24	18.00	22.80	29.76
200.00	24	22.96	27.28	31.60
200.00	36	34.00	39.76	50.92

until the account is liquidated. If, however, any instalment is more than 20 days late the account is returned to Commercial Credit Co. and the utility washes its hands of it.

The finance company then investigates the case thoroughly and either reinstates the account (fee charged \$1) or recommends repossession. Finance company then asks the dealer to repurchase the account and if the latter fails to meet his obligation calls upon the manufacturer to repurchase the repossessed merchandise.

Sales Possibilities Unlimited

I want to emphasize the special features of the plan which are different from any finance plan which had been called to our attention.

First, the plan is based on purchaser credit rather than on dealer credit which tremendously expands sales possibilities. This, of course, is no different than in the case of paper which a utility originates in its own

merchandising operations, but is radically different from dealer plans offered by the national finance companies.

Second, this plan discriminates between the prompt and slow payers, giving those who pay within 10 days of the due date the benefit of the low finance rate.

If payment is made after 10 days, but not later than 20 days after due date, the amount of the instalment is increased by 25 cents. If the payment is deferred beyond 20 days the account is turned back to the finance company and can only be reinstated by payment of an additional fee of

* * *

\$1. This sounds like a rather curt collection policy, but it brings in the money and gives the benefit to those who deserve it—the prompt payers.

It should be kept in mind that when the purchaser is given the privilege of using the "Economy Purchase Plan," that it is pointed out to him very definitely and clearly that such plan is made available because he is considered a good credit risk and prompt pay.

It is further made plain to the purchaser at the same time that any default on his part will penalize him as outlined herein, and with such full information there can be no question of "hard feeling" due to misunderstandings.

Can Pay With Light Bill

The third distinct difference is in the billing. Due dates on appliance instalments coincide with the due date of the service bill and payments can be made at the same time and place the service bill is paid. This saves writing a check or an extra trip down town and is a greatly appreciated privilege.

Fourth, and probably most important, the rate charged for the time payment privilege is substantially lower than most rates heretofore available to dealers.

The following table shows a comparison of the net finance charge with some of the better known national plans for several typical contracts:

		Total Finance Charges (Net)
Unpaid Balance	Number of Monthly Instalments	Electric Home and Farm Authority Plan
\$ 50.00	6	\$ 5.26
100.00	12	9.02

January Shipments For Norge Up 13%

DETROIT—Norge January shipments this year were 13 times greater than those for the same month of 1934, reports President Howard E. Blood of Norge Corp. Orders received by the company to date are 231 per cent of those for the same period last year.

All distributors are reporting heavier buying than in any previous year of Norge's history, Mr. Blood said, with orders especially heavy for the Norge kitchen range, introduced this year, and available in some models in matched color combinations with refrigerators.

Major's '1 Model' Policy Doesn't Apply on Exports

CHICAGO—Major Appliance Corp.'s policy of "one model only" for 1935 applies only to its operations in the United States, states H. F. MacGrath, vice president in charge of sales.

The A. J. Alsdorf Corp., export factor for Major Appliance Corp., will continue to supply export accounts with a complete line of household electric refrigerators, says Mr. MacGrath. The export policy, he declares, will be practically the same as it was in 1934.

100 Midwestern Dealers At Crosley Meeting

ST. JOSEPH, Mo.—Approximately 100 dealers from Missouri, Kansas, Iowa, and Nebraska attended the annual Crosley dealers' convention held here recently by American Electric Co., Crosley distributor.

Don Crosby, Crosley Radio Corp., presented the 1935 line of Crosley refrigerators.

R. A. Peck discussed the kerosene-operated "Icyball," a refrigerator manufactured for use on the farm and in homes where electricity is not available.

Dealer sales helps were suggested by H. Borchardt and M. Burgin discussed servicing.

Stearns Dealers to Attend Service Schools

HARTFORD, Conn.—Stern & Co., Inc., Grunow distributor for Hartford, will hold two service schools and present the 1935 line of Grunow electric refrigerators and radios to dealers, salesmen, and service men at its one-day Grunow refrigeration meeting to be held at the Hartford Woman's Club Feb. 15.

Morning and afternoon sessions will be devoted to service schools and the explanation of the Grunow unit. At the evening session, sales promotion activities, advertising plans, and general merchandising policies of the company will be discussed.

Benbough Co. Exceeds Frigidaire Quota

SAN DIEGO, Calif.—The H. L. Benbough Co., Frigidaire distributor in this city, exceeded its B.T.U. quota of 3,000 by 57 per cent in 1934, according to P. A. Du Pont, supervisor.

Six of the company's nine salesmen bettered their factory quotas, as follows: T. B. Sexton, 225 per cent; A. B. Niethamer, 166 per cent; G. Buckboro, 123 per cent; E. Meech, 117 per cent; J. Morrow, 114 per cent; and J. F. Kirchmaier, 100 per cent.

Artophone Executives Visit Gibson Plant

GREENVILLE, Mich.—Recent visitors to the factory of the Gibson Electric Refrigerator Corp. here were Ray C. Layer and Herbert Schiele, vice presidents of the Artophone Corp. of St. Louis, who visited the plant to familiarize themselves with product and sales plans on the Gibson 1935 line, which the Artophone Corp. will distribute.

Miller to Head Crosley Sales for Denver Firm

DENVER—Waverly N. Miller, for eight years district manager of the Rocky Mountain territory for the Crosley Radio Corp., resigned Feb. 1 to assume charge of radio and refrigeration sales for Central Supply Co., Crosley distributor here.

Maus Made Frigidaire Representative

PETALUMA, Calif.—Henry Maus has been promoted from Frigidaire salesman to Frigidaire field representative for the Murphy Chevrolet Co. for this territory. He will handle household and commercial refrigeration.

Look Inside!

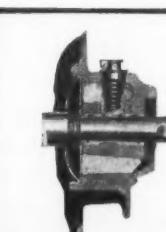
**NEVER BEFORE HAS
ONE MOTOR HAD SO
MANY FEATURES THAT
WILL HELP YOU SELL
DOMESTIC REFRIGERATORS**



Type KC capacitor-motor with automatic belt-tightener base



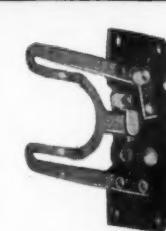
Type KC capacitor-motor with standard base



ADVANCED BEARING DESIGN—long bearing life is assured by an unusually large oil supply and a scientifically designed recirculation system. Pure-wool-yarn packing filters the oil and feeds it to the bearings. Oil throwers and returns recirculate the oil. Thus, a constant supply of fresh, clean oil is assured at all times.



SIMPLIFIED CONNECTIONS SPEED ASSEMBLY—leads for line, cold-control, box-light, and light switch are all easily connected to posts provided in the built-in terminal box, without splicing or soldering. This speeds assembly and hence reduces costs.



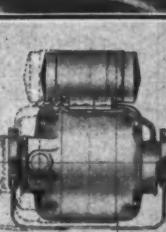
RELIABLE STARTING SWITCH—long-lived—positive-acting—rust-proof—quiet. Built to last the life of the motor. The reliability and long, "care-free" service life of this important unit have been proved by eight years of satisfactory service in the field.



EXCLUSIVE WINDING TREATMENT—will not soften under heat. Bonds the windings together and protects them from moisture, high temperature, and mechanical injury which might shorten motor life. This standard treatment makes the windings suitable for use even in the tropics.

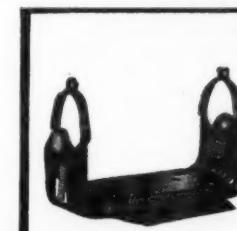


CYLINDRICAL CAPACITOR—small in size, sheathed in steel—fully protected against injury—and fastened rigidly to the motor. Capacitor connections are entirely separate from line terminals, hence there is no opportunity for incorrect connection. (Cover removed in illustration to show accessibility.)



INTERCHANGEABILITY—mounting dimensions for 60 cycle and other commercial frequencies and for direct-current motors are identical. All $\frac{1}{8}$ -hp. to $\frac{1}{4}$ -hp. resilient-mounted motors, with or without belt-tightener base, will fit the same base drilling. The same motor body will fit either the plain or the belt-tightener resilient base.

*Motor length may vary with the rating, but the mounting dimensions remain unchanged.



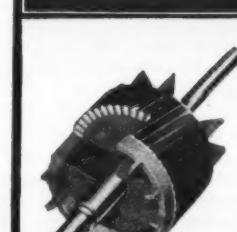
AUTOMATIC BELT-TIGHTENER BASE—depends on torque instead of springs for its action. Hence, it maintains the correct belt tension to prevent slippage of the belt. With this base, belt tension is automatically and evenly regulated to meet changes in load. The result: greatly reduced friction, which means: (1) longer life of belt, bearings, and seals; (2) quiet operation; and (3) lower operating costs.



RESILIENT MOUNTING—"CUSHIONED POWER"—the 1935 Type KC capacitor-motor is mounted in large rings of springy, live rubber that are treated with a special G-E compound which makes them impervious to oil. These rubber rings fit snugly into machined recesses around each bearing housing. This construction isolates single-phase torque vibration and hence helps make this motor quiet.

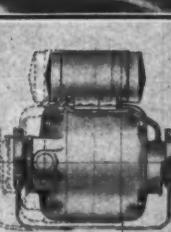


SPRING-STEEL END-PLAY SILENCERS—effectively cushion end bump at both ends, yet permit free movement of the rotor, thus assuring quiet operation without wear or power loss from added friction. Of durable spring-steel construction, these silencers will last the life of the motor.



CAST-ALUMINUM ROTOR—indestructible. Has permanent electrical characteristics and cannot become open-circuited. The entire squirrel cage is a one-piece solid-aluminum pressure casting, made by an exclusive G-E process.

You should have complete information about the Type KC "carefree" capacitor-motor—the outstanding refrigerator motor of 1935. The nearest G-E office will be glad to work with you. And, to insure unit



responsibility for the electric equipment of your refrigerator, we suggest that you consider G-E cold-control units, and cable, along with the motor. General Electric, Dept. 6B-201, Schenectady, N. Y.

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GENERAL ELECTRIC

ELECTRIC REFRIGERATION NEWS

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Nema Chairmanship In Strong Hands

ELECTRIC REFRIGERATION NEWS congratulates the Household Refrigeration Section of the National Electrical Manufacturers Association upon its choice for chairman: Thomas Evans, president of Merchant & Evans Co., Philadelphia.

Mr. Evans is in a strategic position. As president of an old and respected manufacturing concern, he has not been involved in the bitter competitive strife which has frequently embroiled some of the industry's manufacturers; nor is he likely to countenance any stifling gestures which the "big fellows" might make toward the "little fellows." With a long period of consecutive service in refrigeration, he has an historical perspective with which to view the questions of the day. And as an altruistic citizen with a penchant and an aptitude for public life and service, he stands ready to devote unselfish labors for a cause.

Achievement by Mutual Endeavor

Just what cause Mr. Evans may elect to sponsor is a matter of conjecture. Were "cooperation" not so hackneyed and misused a word, perhaps it would fit. Suffice it to say that Mr. Evans purposes to lead the industry further on the path up which it has been ushered by the late, beloved "Geoff" Johnston, who preceded him—a path toward achievement by means of mutual endeavor and trust.

"Geoff" Johnston taught the industry's leaders that a competitor is a human being, after all; and that he will respond to human and humane treatment. Mr. Evans has the same very practical theory.

A Fearless Fighter

Let fair warning be sounded, however: Thomas Evans is a fighter. Whenever he feels a principle is at stake, whenever he believes that there has been a miscarriage of justice, he becomes a dangerous man for any set of adversaries. He understands the uses of publicity, he has an empirical knowledge of law and government and how they may be utilized to further the aims and purposes of a movement, and he is absolutely fearless.

Just what the incoming chairman's initial moves will be remain to be seen. In the first place, he has no special axes to grind. In the second, Mr. Evans finds, upon assuming his new responsibilities, that the household electric refrigeration industry is in an extraordinarily praiseworthy state of felicity.

A Code Committee with Power to Act

No better proof of this statement could be found than in an act of the Refrigeration Division of Nema itself at the Nema convention in New York City last week (the last meeting of the Refrigeration Division of Nema as such; it now splits into a "Household Refrigeration Section," and a "Commercial Refrigeration

Section" of Nema). This august body of the industry's peers voted to turn over to its technical committee, which is composed of engineers rather than executives, all matters pertaining to municipal codes for the installation and servicing of refrigeration equipment.

In the past perhaps no single bone of contention has been so vigorously gnawed and snarled over as that of municipal refrigeration codes. In every case it has been a battle of refrigerants—or rather, of groups adhering to the use of one refrigerant as better or safer than another. There was, for instance, the mighty Code War of Chicago in 1929, when the entire industry aligned itself into two camps, methyl chloride and sulphur dioxide, and did battle zealously for four exciting months. Then came many lesser skirmishes, topped by the series of fights over the proposed exemption of Freon from restrictions applying to other refrigerants. Even today there is a code fight being waged in New York City, and there are rumblings of renewed activity in the Chicago sector.

The word "code" was once a signal for hostilities. Emissaries were sent to the battlefields and to the encampments of the enemy under sealed orders; rarely could they act for themselves, for nearly always the chief executives reserved final right of decision in such matters. When these chief executives delegate this authority to a committee, then, and let one committee represent an entire industry behind a united front of all manufacturers, real progress has been made.

An Experienced Executive Group

To assist further his purpose of directing a vigorous young industry through channels of mutual felicity and effective organization, Mr. Evans is fortunate in being able to work with a group of seasoned executives. The men now sitting at the head table are tried and tested chiefs who have brought their companies through the depression successfully. He may count on maturity and wisdom of judgment among his conferees.

Mr. Finnie an Able Adviser

In Haldeman Finnie, full-time manager of the association-within-an-association, Mr. Evans has an adviser and executor who ranks in the top flight of association officials. Mr. Finnie has brought to his post a long background of experience as a successful manager of one of the leading oil burner manufacturing companies. He also has the happy faculty of being a natural coordinator.

All in all, the stage seems propitiously set for a successful administration of the industry's affairs. And that Thomas Evans will devote a full mead of his abundant energies toward that worthy purpose, dealers, distributors, and salesmen everywhere may rest assured.

WHAT OTHERS SAY

A United Front for Business

RECAPITULATION of the sales accomplishments in some territories during the past year shows what may be done. An added increment of 200 kwh. to the average domestic customer use is a beacon that has been lighted by one or two utilities in this class of business. Large increments in industrial power and heating load in some areas shows what can be done in all. The Better-Light campaign has opened up new levels for lighting accomplishment. Intelligently applied sales programs can cut the "loss customers" in the domestic class 15 to 30 per cent in one year.

These straws of accomplishment show what might be done and will be done when the industry goes to work in the marketplace on a national scale and with a coordinated plan developed and applied by a united effort. This is a psychological moment to get prosperity through action.

This industry is sound. It has weathered the depression better than any other industry. It has opportunities for expansion unequalled by any other industry. It has had vexations and trials that have had an exaggerated effect upon the morale of its leadership and it has been slow in seizing upon its opportunities as a consequence. But this stage is passing rapidly.

The road to recovery and prosperity is being swept clear of the rocks and drifts accumulated in the storms of depression. Industry leaders have regained confidence in the public and in their industry and are going forward. With organization and a united front they cannot fail—*Electrical World*.

household electric refrigerators who accounted for approximately 88.5 per cent of all sales during 1934 report their figures to the Refrigeration Division of National Electrical Manufacturers Association (Nema), and only total figures are released to us. Monthly Nema figures are published regularly in ELECTRIC REFRIGERATION NEWS as soon as released.

LETTERS

Air Conditioning Surveys

Fuller & Smith & Ross, Inc.
Advertising
1501 Euclid Ave., Cleveland

Editor:
Due to the fact that Westinghouse is in the air-conditioning business, I follow carefully the many excellent articles on that subject which you publish.

In particular, I am glad to see in your issue of Feb. 6, that very complete report of air-conditioning installations in Chicago.

I would like to suggest that you take steps to obtain and publish reports of similar character from all the cities of 100,000 population and over. I think you could do no greater immediate service to the industry than that.

At this stage of the industry, the best marketing guidance for all manufacturers and distributors is accurate information about the "what, where, and to whom" of current sales of equipment. Some utilities can furnish such data readily; others can not.

I have lately been trying to accumulate reports of installations from some 60 cities as a basis for the guidance of distributors, and for use also in the new Westinghouse air-conditioning school for district representatives, distributors, utility men, and others who have an interest in this field. My success in getting these reports has been "various."

I know that others in the field have the same interest that Westinghouse has, in knowing the main details of what is being accomplished by the selling efforts of the industry as a whole; and if you would undertake to obtain and publish these data, at least annually, for as many cities as possible, I am sure you would find the industry responsive and appreciative.

No one else is doing this. I think you could do a better job of it than any institution I know of.

LEON F. HUSSEY,
Manager of Marketing.

Paper for Service Men

431 E. Railroad
Casper, Wyo.

Editor:

Do you publish an electric refrigeration magazine that is more helpful to the service man than the ELECTRIC REFRIGERATION NEWS. If so, what is it and what is a subscription per year and also quarterly if you sell it that way.

VIRGIL S. CRUM.

Answer: ELECTRIC REFRIGERATION NEWS is not designed especially for the service man but contains a great deal of information which you will find valuable and helpful. During the past year we have published a considerable number of articles giving detailed instructions regarding the servicing of various makes of machines and much technical data dealing with various phases of design, installation, and service.

In addition, we have published complete and detailed specifications regarding all models of all makes of electric refrigerators, both household and commercial, together with the essential data regarding all makes of air-conditioning equipment.

In addition to this ELECTRIC REFRIGERATION NEWS keeps you informed regarding the important developments in the business. The wide-awake service man who wants to keep abreast of the times can scarcely afford to do without it.

10 Leading Makes

Alfred Aluisio
Electrical Contractor
538 Warburton Ave.

Hastings-on-Hudson, N. Y.

Editor:

Please send me, if available, the figures regarding gross sales of all refrigerators during the fiscal year of 1934.

Also, who were the 10 national leaders, including figures of gross sales of each, and the 10 leaders in metropolitan New York with figures of gross sales of each.

ALFRED ALUISIO.

Answer: According to the tentative estimate made by ELECTRIC REFRIGERATION NEWS, 1,400,000 household electric refrigerators were sold by industry manufacturers to their distributors and dealers during the calendar year 1934. Average unit price was estimated at \$172, and dollar volume of sales, \$240,800,000.

Sales for the year 1934 were summarized in an article on page 1 of the Jan. 2 ELECTRIC REFRIGERATION NEWS.

We have no information available which would enable us to rank the various manufacturers of household electric refrigerators according to their sales volume either for the United States as a whole or for metropolitan New York.

Thirteen large manufacturers of

household electric refrigerators who accounted for approximately 88.5 per cent of all sales during 1934 report their figures to the Refrigeration Division of National Electrical Manufacturers Association (Nema), and only total figures are released to us. Monthly Nema figures are published regularly in ELECTRIC REFRIGERATION NEWS as soon as released.

Two Fine Publications

The A. J. Alsdorf Corp.
223 W. Jackson Blvd., Chicago
Editor:

We want to avail ourselves of this opportunity to frankly inform you that we very much believe in your DIRECTORY, as well as in your ELECTRIC REFRIGERATION NEWS, which in our opinion, is one of the finest publications in its sphere, ever issued. The writer reads practically every word of ELECTRIC REFRIGERATION NEWS, and the more he reads your issues the more anxious he is for its delivery every Friday.

A. J. ALSDORF,
President.

1935 Directory

Giovanni Emanuel
Torino, Italy

Editor:

We notice that towards the end of February you will be ready to distribute the 1935 edition of two volumes, vis.: REFRIGERATION DIRECTORY AND MARKET DATA BOOK, which we hereby wish to order. Your copy of the 1934 edition has proven its worth and we cannot do without your new issue.

Kindly send both volumes via parcel post collect, or else send us the invoice right away so that we may obtain the necessary dollars and thereby have our bank send you a check for the amount involved.

GOVANNI EMANUEL.

"ELECTRIC REFRIGERATION NEWS is one of the most interesting periodicals we know, which every week is studied from A to Z."—J. W. Konig, manager, Zuivelwerkten en Koeltechniek N.V., Schiedam, Holland.

BOOKS

'The Romance of Research'

Authors: L. V. Redman and A. V. H. Mory. Publisher: The Williams & Wilkins Co., Baltimore. Pages: 149. Price: \$1.

NOT until General Electric dramatized its Schenectady research department by calling it "The House of Magic" and making up a road show based on some of its stunts, did a vast portion of the specialty selling industry realize just how important a part research plays in their daily work.

"The House of Magic" demonstrations, however, have aroused the industry's curiosity.

Research departments devise the products from which distributors, dealers, and salesmen make practical applications of the laws of physical phenomena.

All too frequently the scientists who have the knowledge and brain-power are not paid particularly well for their services. Merchandising organizations get the money. But the researchers have their compensations.

This thin little volume attempts to explain just what research is and how laboratory scientists get that way. And it will answer many questions about science and scientists which have long been revolving in the minds of specialty salesmen.

The authors preface their resume of the story of scientific research with an epigrammatic statement credited to Hippocrates. They dispose of the next two thousand years in the same paragraph. From then on it's touch and go from the advent of dissection to lacquer and cellophane.

The word "romance" in the title seems to serve as a synonym for "martyrdom" in this instance. Going to the guillotine and not coming back, or going to prison and coming out old and broken, was the reward the early research worker got for his curiosity. But good titles help to sell books, and this one is certainly worth \$1.

After recording the somewhat dilatory progress of science up to the landing of the Pilgrim Fathers, the authors point out the significant fact that free education in a free land resulted in unhampered thought in the field of research and invention.

The subsidization of pure science by commerce and industry has also helped push back the frontiers of discovery.

The book closes with a word of regret that social science has not kept pace with physical science, and an appeal for more research in that field.

On the Set at Dayton with 'Hike' Newell Starring



Frigidaire made a movie as part of its program to explain its 1935 plans to the field, and in the scene above, H. W. Newell, vice president in charge of sales, is the principal character.

DEPARTMENT STORES

Proffitt Is Successful In Concentrating on One Appliance Line

CLEVELAND — "Concentration on one line of appliances has been largely responsible for whatever success we have had in selling electrical merchandise," declared D. W. Proffitt, Proffitt's Department Store, Maryville, Tenn., in a speech before the General Electric merchandising clinic at Nela Park.

"I know," said Mr. Proffitt, "there are successful executives today who believe their department should have as many different kinds and different makes of electric appliances as possible. They feel possibly they should have almost every kind of appliance a prospective customer may call for, but I thoroughly disagree with this idea."

Salesman Better Equipped

Mr. Proffitt stated that he appreciated the fact that the problem in the smaller town is different than the problem in the city store, but that he believed the salesman who sells successfully must both know and believe in the appliance he is trying to sell.

"I find it hard," he confided, "to get salesmen who thoroughly know one line of appliances, much less three or four. Too many of our salesmen today do not know their product."

"In the appliance game if you have an electrical appliance department, or if a person is interested in establishing an electrical appliance department, the first thing they should do is select a line of appliances they want to sell, get it if they can, and then put every ounce of effort they can command behind the successful merchandising and selling of that line."

Mass presentation Difficult

It is confusing to the customer and to the salesman to try to show and sell several different makes of electrical refrigeration, believes Mr. Proffitt.

"The successful executive today must be an analyst," he declared. "He must have research facts. You can no longer depend on judgment and experience, although they are both valuable."

"Concentration on one line will give a much better turnover," stated Mr. Proffitt, "and the turnover is what counts in the appliance game."

Cites Hypothetical Case

He cited a hypothetical case as follows: "Suppose you are now handling the General Electric line of appliances and you decided to add an additional line of appliances, regardless of whatever make that might be. Undoubtedly it will double your inventory, but unquestionably it will not double your sales. The margin of profit on electrical appliances is small, and if that department is to be successful it must have turnover."

Mr. Proffitt stated his theory in brief: "You can't handle all the good lines that are made, so just concentrate and handle one of the best."

Toledo Store Describes 'Special' Treatment of Appliance Selling

CLEVELAND — Recognition that there is a fundamental difference between the sales of major appliances and the sales of other types of merchandise sold in the average department store, was the reason for success enjoyed by the electrical appliance department of the Lion Dry Goods Store of Toledo, declared Arthur Pete, in a talk to the General Electric merchandising clinic.

"I think we can do a good many things in department stores to help major appliance companies do a better job, and by the same token I think they can do things to help us do a better job," he stated.

"I think we recognize that if we are going to have a mechanical department in our store we must have a service department to measure up to the mechanical department, because any woman who buys a mechanical outfit knows something is going to happen to it some time, and unless the store is in position to service that thing and service it promptly it is going to lose more good will than it has created," he declared.

Mr. Pete believes that good outside salesmen are necessary because the selling of major appliances is a creative salesman's job and creative salesmanship calls for alert salesmen. "I think we should pay them more," said Mr. Pete. "In order to have an aggressive outside organization, they must not only be well paid but they must be sure they are going to have a continuous job."

Many organizations, he said, fail to realize that outside salesmen, paid on commission only, may lose a lot of business because of inefficient selling, even though they bring in \$100 or \$200 a week extra business.

The head of a major appliance department must be a super sales manager, not only in major appliances but in every part of our department stores," Mr. Pete declared.

Mr. Pete feels that a first-floor selling station is essential in the merchandising of major appliances. He says "A first-floor location certainly will give you greater business and manufacturers greater cooperation."

The Lion store, he said, established a first-floor selling space. "We created it first to do away with memorandum sales on radios . . . We keep open until 9 o'clock at night. It is in a separate building adjoining our store. We have practically eliminated installation selling and created a major appliance department that has been successful."

Sales cooperation, promotional ideas, and advertising cooperation were included in the obligations Mr. Pete believes the manufacturers of electrical appliances owe to retailers.

During the past year, he stated, the Lion department store asked two or three major appliance companies to give the store a certain quota of the advertising money which would ordinarily be spent on advertising prepared by an agency and written

Merchandiser Asks Utility Cooperation In Servicing Units

CLEVELAND — With regard to cooperating among utilities, retailers, and manufacturers, S. Einstein of the G. Fox Co., Hartford, Conn., in speaking before the General Electric merchandising clinic, recommended that "we consider seriously asking the utilities to assume the role of servicing the major electrical appliances."

"Consider the multiplicity of service departments now being maintained by all the dealers in the city and how much more economically and efficiently that job could be done if it was done in a central place," Mr. Einstein remarked.

A clock or toaster could be repaired by the utility instead of being sent back to the manufacturer and causing the customer inconvenience for three weeks, he pointed out.

"The manufacturer who cooperates in such a movement enjoys some degree of success by working out a very reasonable arrangement with the utilities for repair parts which will probably afford them a fair margin of profit," he said.

Mr. Einstein—"slipping out of the role of merchandise manager into that of comptroller,"—discussed accounting principles and practices.

"What constitutes cost in a department store? Cost of merchandise and cost of service. Service consists of two major parts—direct service, by which we mean an expense that you and I know definitely is traceable to that department and so is called direct expense. What do we mean by indirect expense? Rent, occupancy, and so on."

"Many stores," he stated, "have developed a system of accounting which somewhat approaches the refinements

Editor's Note: On this page are published reports of addresses made at the recent General Electric Merchandising Clinic in Cleveland, and which were not published with the other reports on the Clinic in last week's issue because of lack of space.

The subjects treated in the current issue are of a diversified nature, and should be of practical value to readers who have any interest—either as participants or competitors—in department stores merchandising electric appliances.

made in other industries, that is, they attempt to apportion their expenses on a direct basis as possible without incurring too much red tape. They do apportion some items on the basis of sales but it is only the smallest part of the total store expenses that is proportioned on the basis of sales."

Mr. Einstein stated that the major electrical appliance departments will not benefit by the "reservoir concept" idea unless their stores belong to the class that still apportion their overhead expense on the basis of sales.

He said that most stores apportion their rent and occupancy on the basis of area, on the persons employed, and charge transactions, and the number of sales written in each department.

Chain of 33 Stores to Sell Crosley Units

BOSTON — The World Radio Co., with headquarters in this city, is now selling Crosley electric refrigerators through its 33 stores throughout New England, reports Neil Bauer, field sales manager, Crosley Radio Corp.

Good reputation is built slowly —step by step—over a period of years. It results from wide-spread recognition of character and integrity as demonstrated by performance. It is a significant fact the public and trade speak well of Universal Cooler and regard its units as trustworthy and dependable.



UNIVERSAL COOLER CORPORATION
DETROIT, MICHIGAN

BRANTFORD, ONTARIO

MANUFACTURERS OF A COMPLETE LINE OF HOUSEHOLD AND COMMERCIAL REFRIGERATION EQUIPMENT

Phases of Administration Plans Explained at Nema Meeting

(Continued from Page 1, Column 5)
 Leonard Refrigerator Co., Thomas Evans of Merchant & Evans Co., Howard Blood and H. H. Whittingham of Norge Corp., J. H. Schroeder and C. W. Marshall of Sunbeam Electric Mfg. Co., Tom Pendergast of Universal Cooler Corp., and R. I. Imhoff of Westinghouse Electric & Mfg. Co.

In addition to the meetings of the various sections, there were big general sessions of the round-house variety—chiefly at expensive luncheons and dinners. Big disappointment was the failure of Madame Secretary Perkins, head of the United States Department of Labor, to show up for her scheduled banquet speech.

Three of the speeches at these general sessions were, however, made by government officials; and these drew the most attentive audiences.

Thorp Tells Purpose Of Price Structures

NEW YORK CITY—The National Recovery Administration has by no means abandoned the hope of improving the functioning of the price structure of various businesses through code provision, declared Willard L. Thorp, chairman of the NRA Advisory Council, in addressing the National Electrical Manufacturers Association last week.

"Policy on prices is, and should be, in a continual process of evolution," said Mr. Thorp. "Nevertheless, methods of dealing with some of the particularly flagrant abuses of the price system, are gradually emerging."

Where the real difficulty is created by "lying buyers," the open price filing

system permits each manufacturer to have the prices of his competitor, Mr. Thorp pointed out. When price discrimination appears as between purchases, the same open price system can provide a mechanism for correcting this evil.

The man whose prices are out of line because of ignorance, may be reached by educating him to use a cost accounting system sponsored by the Code Authority, and by making available to him direct comparisons between his price and his competitors'.

Emergency Control

The man who deliberately precipitates a price war may be violating the code under the destructive price-cutting provision, and if the price situation becomes panicky, there is always the technique of declaring an emergency, and applying special temporary controls.

"The fundamental difficulty is to distinguish between that price behavior which is unfair and discriminatory, and that which is merely the reflection of underlying economic factors," said the speaker.

"The first can be met by various devices of the sort listed above. The second is only aggravated by tampering with prices. The difficulty must be traced back to its source where remedies should be applied to meet the particular situation."

In discussing the NRA before Nema, Mr. Thorp confined his talk to a consideration of three problems—price policy, the problem of distribution differentials, and the basic question of the relationship of the Administration to "industrial self-government."

"I think it is fair to say that two

main theories of recovery have appeared in connection with the National Industrial Recovery Act," asserted Mr. Thorp.

"The first is that its contribution to industrial revival lies chiefly in the Public Works section of the act and the wage and hours provisions of the codes, both of which presumably tend to increase purchasing power.

Profits Lead to Recovery

"The second argues that recovery will come when profits appear, that profits are determined by prices, and therefore code provisions supporting prices provide the key.

"It is not surprising that most business men have been attracted by the second argument. It goes without saying that, if all other things remain equal, and selling prices can be raised, then the red disappears. And since the behavior of this price has been the immediate instrument which has taken away the profit, it becomes the scapegoat.

"So we find some few codes providing for outright price-fixing, and a considerable majority with some variation on the 'no selling below cost' theme."

Change in NRA Control

As time has gone on, the NRA official explained, the NRA has become increasingly uncertain over the economic wisdom or practical operation of such price controls. At first, it had seemed a simple matter to determine a "price-floor" for an industry. But it soon became apparent that in many industries, the products and service functions of specific manufacturers varied so that no uniform determination could be just—and the test had to become the individual's cost, or the lowest reasonable cost, based on the records of the entire industry.

Then came the difficulty of defining cost. How should cost be computed when operation is far below capacity? Where overhead is a considerable

item, the total costs are high or low as fixed charges are spread over a small or large market. In fact, the market determines the unit cost, rather than the cost, the market. An automobile manufacturer does not know his per unit cost until the last car is manufactured.

Another problem, according to Mr. Thorp, concerned what items should be included—selling expense, advertising cost, return on investment, allowance for rent on owned property, and the like.

What Prices May Include

Beyond these technical difficulties, Mr. Thorp pointed out, is the fact that the control of price cannot be regarded just as a matter of a single dollars and cents determination. In a great many transactions, along with the object purchased go many other considerations which make it in reality a combination purchase, and the character of payment, in turn, is frequently more than a single outlay of cash.

In buying a commodity, one may be purchasing as well various services, such as delivery and free repairs; guarantees of quality or against price decline; premiums and opportunities for prizes; brand name; credit for a period of time; options on other purchases; sales assistance; and the like.

On the other hand, payment may be complicated by cash, quantity, and special discounts; advertising allowances; freight allowances; customer classifications; credit terms; privilege of cancellation; and so forth.

"When we begin to control prices, we must tie up all the other elements which enter into the contract, or there is little effectiveness in pegging the cost part of the transaction," Mr. Thorp averred.

"Competition only transfers itself to some other form. The famous Yankee ingenuity which manufacturers have displayed in keeping certain prices on file, but still offering substantial inducements to buyers, receives much more exercise when competition is at the level of the price-floor."

Price Changes Not Isolated

The broader difficulty in exerting control over price appears, according to Mr. Thorp, because such action assumes price to be an independent, isolated factor which can be tampered with, without serious results elsewhere.

"The price of each single commodity is subject to limitations imposed by other prices," the speaker explained. "Price changes are not isolated phenomena. Thus a change in the price of cotton will be reflected in the price and purchase of finished cotton textiles, which in turn will affect rayon and silk. This may involve additional textile machinery of one sort or another."

"Possibilities in substitute commodities is endless, not only in the obvious form of gas and electricity, coal and fuel oil, and movies and magazines, but in the continual set of choices which consumers must make—a book or a bonnet, a refrigerator or a radio.

Heart of Economic System

"We cannot stop this analysis even with the price system. Prices must not be regarded as independent economic phenomena. They are not merely a part of the entire economic system but they are at its heart.

"As the economic system in this country has developed, we have no dictator to tell each one of us what to do, no economic council to direct industry, allocate investment funds, and allocate products to consumers. This task has fallen primarily on the price system. Prices are the most usual mechanism for selecting producers and consumers—for determining production and consumption.

Limit Demand by Price

"A high price encourages production, a low price discourages or eliminates some members of the industry. Likewise it selects the consumers.

"If 25 cents were the admission charge to an Army and Navy game, some new criterion of admission would need to be used. But by the simple expedient of setting a price, the applications for tickets can be automatically limited to any figure. Place the price high enough, and give no complimentary tickets, and you could reduce the audience to 10 spectators.

"This is a constantly shifting economic order. Style, fashion, and even caprice can shift the demand of consumers with great rapidity. New technical processes can require the complete reorganization of an industry, while new products may displace old established lines. These changing conditions call for rapid adjustments, and reliance for achieving them now rest heavily upon the price system."

The second problem on which Mr. Thorp touched is that of those code provisions, which affect the channels through which goods flow from manufacturer to retailer through modifying, changing, or applying preservatives to present practices.

"Many code provisions, intentionally or unintentionally, affect the processes of adjustment now going on in the general pattern of distribution—that is, problems arising out of competi-

tion between jobbers and manufacturers who sell direct to retailers, or between jobbers and mass distributors.

"Among the provisions which are pertinent are mandatory wholesale differentials, merchandising plans, mandatory classification of customers, fixed rates of discount, resale (wholesale) price maintenance, and the like.

"Furthermore, the jurisdiction over several competing groups in the distribution of a specific product may fall in separate codes, and thus create arbitrary differentials.

"Problems in this area have been made peculiarly pressing in recent years by the development of mass distribution and direct selling to retailers by manufacturers.

"It is charged that codes have been employed by groups of manufacturers using one method of distribution to gain an advantage over manufacturers using other methods; by manufacturers to gain control over their distributors; and by distributor of one type to gain an advantage over distributors of another type."

This is one of the most disturbing situations with which NRA must deal, and one in which opposing viewpoints are exceedingly vigorous, Mr. Thorp confided.

The danger, as he sees it, is that code provisions may put a stop to progress in the field.

He feels that possibly they can be used to encourage progress and make it more orderly. Certainly they should be used to eliminate unfair methods of competition and unjust discrimination, whenever they can clearly be shown to exist, Mr. Thorp believes.

At present, NRA is making a careful inventory of its own experience and knowledge in connection with distribution differentials, and will shortly announce a public hearing to gain the benefit of the advice of all interested parties.

Altmeyer Describes Social Legislation

NEW YORK CITY—Economic security legislation now before Congress will not place any undue burden on employer, employees, or investor; but at the same time it will lay the foundation for that security which is deemed so necessary to the well-being of the Republic, Assistant Secretary of Labor Arthur J. Altmeyer told members of the National Electrical Manufacturers Association at their annual dinner at the Waldorf-Astoria hotel last Thursday.

"The proposed measures have been carefully timed to keep pace with, rather than to retard, the onward sweep of recovery," Mr. Altmeyer said.

The beginning rate of contribution under the unemployment compensation plan which becomes effective Jan. 1, 1936, is only 1 per cent, unless there has been very substantial recovery, and even then it cannot exceed 3 per cent of the payroll, the speaker explained. The beginning tax rate under the old age insurance plan which becomes effective Jan. 1, 1937, is 2 per cent and is borne jointly by employees and employers.

"Unemployment compensation, old age assistance, aid to mothers and to (Concluded on Page 13, Column 1)



A TOP

of Monel Metal on the cabinet that bears

your name flashes a quick message to buyers that the mechanical unit is quite all right and that both workmanship and materials are A No. 1. Monel Metal has long been standard for the tops of all the leading makes. It was adopted by them when they were struggling for their leadership.

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET
NEW YORK, N. Y.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel. CODE



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*Dependable
Refrigerants . . .*

SULPHUR DIOXIDE

Manufactured under strict laboratory supervision. Absence of moisture and foreign materials made certain through analysis of every cylinder. Forty warehouses can supply you immediately. Write for prices and location of nearest source of supply.

METHYL CHLORIDE

A product backed by Ansul's wide reputation for producing dependable refrigerants. Low moisture and acid content are guaranteed by laboratory analysis of every cylinder. Write for full information and prices.

ANSUL CHEMICAL CO.
MARINETTE - WISCONSIN

Altmeyer Explains Social Legislation

(Concluded from Page 12, Column 5)
dependent and crippled children and extended public health services have been considered, as separate but closely interwoven phases of any program of security," stated Mr. Altmeyer.

"Most of the criticism directed against our program in communications received by members of the Congress is that it is not liberal enough. Our role has been to seek a sound course which, while providing for the welfare of the mass of the people, does not unfairly penalize one class."

The unemployment compensation program, Mr. Altmeyer pointed out, has been planned to allow the states full latitude in working out their own systems of unemployment compensation. It provides for a uniform Federal tax on payrolls, against which the employer may offset his contributions to an approved state unemployment compensation fund. This device is intended to protect the employer from any disadvantage in interstate competition, and at the same time to stimulate the passage of unemployment compensation laws in the states.

Federal Payroll Tax

By a uniform federal payroll tax every employer will be placed on the same competitive basis from a national standpoint, it was made clear by the speaker. At the same time, although compliance with certain minimum standards is necessary, the states are free to adopt systems best suited to their own needs. Under such systems, in which compensation must be definitely related to the period of earnings, the duration of benefits received as a right must necessarily be limited, in order that the fund may be at all times strictly solvent.

Such benefits are designed to be sufficient to tide the worker over normal periods of unemployment.

"Beyond this, provision must be made to provide security for the worker if he is still without a job when his period of benefits has expired," asserted Mr. Altmeyer.

Supplementing these limited unemployment compensation benefits, there should therefore be work benefits—that is, the opportunity to employment as a right on public works projects.

Unemployment Relief

The President's Committee, therefore, recommended, first, compensation for a certain length of time depending upon the worker's length of service, to tide him over the period during which he may normally expect to be re-employed, and, secondly, in the case of extended unemployment, the provision of some sort of work relief, as soon as regular benefits are exhausted."

Mr. Altmeyer declared that sentiment is very evidently in favor of providing needy old people with a decent and dignified subsistence in their declining years. At the same time he gave the opinion that such a proposal as the Townsend plan, which advocates a free pension of \$200 a month to every person over 60 years of age, is unthinkable.

Old Age Program

The speaker explained that the administration's old age security program contains three proposals:

"(a) The federal government shall come to the aid of the non-contributory state pension laws, matching the state's expenditures dollar for dollar up to, but not beyond, \$15 a month per person. This would not, of course, prevent the state, if it saw fit, from granting a more generous pension. It merely limits the federal contribution to \$15. Federal aid, of course, would only be granted to states adopting certain uniform standards and paying pensions sufficient to provide reasonable subsistence compatible with decency and health.

"(b) A compulsory system of contributory old age insurance, financed through joint contributions by both employers and employees whereby workers receive an annuity when they retire at 65 years of age which varies from 15 per cent to 55 per cent of their average wage. This annuity is paid as a matter of contractual right and not on the basis of need.

"(c) A system of voluntary annuity certificates which may be purchased by those subject to the compulsory system to augment their annuities or which may be purchased by persons not covered by the compulsory system."

Four governmental measures are proposed for the protection of children who are in need of special assistance, according to Mr. Altmeyer. They are:

"(a) Federal grants-in-aid to states toward meeting the costs of aid to dependent children, often called "Mother's Pensions." This aid would be on a one-third basis, the Federal government paying one-half the amounts actually expended by the state and local governments.

"(b) Grants-in-aid to the states for child and maternal health services, especially in rural areas and in areas

suffering from severe economic distress.

"(c) Grants-in-aid to the states to enable them to provide transportation, hospitalization, and convalescent care for crippled children especially in rural areas.

"(d) Grants-in-aid to the states to enable them to extend and strengthen their welfare services for the protection and care of dependent and neglected children and children in danger of becoming delinquent. All of these three types of grants-in-aid are substantially on a dollar for dollar matching basis.

Manufacturers Must Help In FHA Work—Moffett

NEW YORK CITY—"If the electrical appliance industry is to cash in on all the opportunities in our campaign, home modernization must be sold by the electrical manufacturer, wholesaler, and retailer as well as the electrical contractor," declared James A. Moffett, administrator of the Federal Housing Administration, before the meeting of the National Electrical Manufacturers Association last week at the Waldorf-Astoria hotel here.

Methods of accomplishing this, he believes, are through advertising, public addresses, starting or helping along the organization of modernization campaign committees in their communities, and volunteering for individual work in house-to-house canvasses to secure pledges from home owners to modernize or repair their property.

House-to-House Canvassing

"Nothing," said Mr. Moffett, "is so effective in promoting modernization as the house-to-house canvass; nobody is so effective in canvassing as a man who stands to profit directly in his business from the modernization he advocates."

Mr. Moffett quoted from an article by F. C. Jones, Nema president, in a recent issue of the magazine *Electrical Manufacturing*.

"For the electrical industry, the Federal Housing Administration program means electrical product business running into stupendous figures—business which will come directly from the improvement of homes and commercial properties, in new wiring, switches, fittings, appliances, heaters, ranges, refrigerators, air conditioners, and all such directly sold electrical products, but it means an even greater volume of orders and profits which will be derived from the many branches of the durable goods industries being awakened and rekindled into activity through the housing administration home improvement drives."

Want New Appliances

Mr. Moffett believes that it is not necessary for the home-modernizer to plan the job to include one of the permanent or built-in electrical products listed in the above quotation, in order that the electrical industry may make a profit through the FHA program.

"In creating thus far, through actual work and jobs pledged, more than \$400,000,000 worth of modernizing and repairing," he stated, "the housing administration has observed that when a man and his wife have their residence all fixed up, they want to buy, and do buy, new things... So they are prospects for the makers and sellers of electric appliances.

"The modernization program," he continued, "creates a year-round, unfailing market for the electrical materials used in altering or repairing a residence. In the past, such building activities had their seasons, but under the modernization campaign stimulus they are continuous. We have had numerous community reports of the campaign increasing building operations in December."

In referring to cooperation between Nema and the housing administration, Mr. Moffett pointed out that a suggestion published in Nema literature said: "Study the whole program and make your suggestions to the FHA for changes, improvements, additions, which would make it more effective."

He expressed the hope that members of the electrical industry would take advantage of the opportunity to submit suggestions. "Show us a way to promote your business," he urged, "and we will do our best to act on it; for promotion of business for you means promotion of modernizing."

Mr. Moffett said that the eventual aim of the FHA program is to reform the residential mortgage structure so that credit will always be available and the normal need for new homes will be met in good and bad times.

"America requires hundreds of thousands of new homes right now," he declared. "Five years of slackened construction are behind us. Before us there stretches the prospect of building and equipping the homes needed through new and inexpensive form of financing.

"If this effort meets with success, the electrical industry in all its branches should prosper. I believe that every part of your industry, whether concerned with capital goods or consumer goods, will enjoy renewed and continual returns."



New 1935 Values

Seeger presents these two modern and attractive Apartment and Small Home Refrigeration Cabinets, at extremely modest prices—to give Distributors, Dealers and Department Stores much greater values in the two very competitive sizes 4 ft. and 6 ft.

Medium in price—Yes they are low prices—these All-Steel Seeger Cabinets finished in Dulux with porcelain interiors—are built to Seeger Standard in Beauty of Design, Adequate Insulation, Durability, Efficiency and Economy of Operation.

**By
Seeger**

If interested in going after that replacement market in Apartment House and Small Home Refrigerators, write for complete details.

Seeger Refrigerator Company

Saint Paul - Minnesota

New York, N. Y.	Los Angeles, Calif.
Boston, Mass.	Philadelphia, Pa.
Chicago, Ill.	San Francisco, Calif.

SERVICE

Georgia Power Booklet Explains Ways to Renovate Commercial Refrigeration Equipment

Editor's Note: The following material is extracted from a booklet "Long Live Your Refrigerator" prepared by William F. Ogden, general superintendent of appliance repairs, Georgia Power Co. It was intended by the Georgia Power Co. for the education of users of commercial refrigeration equipment, but it is our belief that it will also serve to educate service men and commercial refrigeration salesmen on the matter of modernizing commercial installations.

To appreciate the importance of refrigerator efficiency, we need only to consider the refrigerator of today, as compared with its predecessor of several years ago.

Fundamentally the refrigerator remains unchanged. But, through constant improvement in details, engineers have given us (1) greatly increased efficiency, hence lower operating cost; (2) greatly improved performance, hence less interruption of service; and (3) better refrigeration.

Many refrigerator owners realize the dollars and cents importance of power consumption. Most of them know that efficiency and savings, like Jack and Jill, go hand-in-hand. As the efficiency of the compressor goes down hill so go the savings that have been made in electrical refrigeration over other forms of refrigeration.

There are small but vital units, such as float valves, controls, strainers, suction and discharge valves, etc., which become defective or get out of adjustment after years of constant service. Any one of these units is liable to lower the efficiency of the entire system.

We recommend that troubles or costly leaks be corrected during the winter, or cold weather, months. There will be less chance for food spoilage than if you were without refrigeration for several days during the summer or warm weather months.

It is an actual fact that the majority of equipment failures occur in the hot summer months when refrigeration is of the utmost importance. This is due to the fact that more work must be done by the refrigerator because of higher outside temperatures. It is this extra work, or load, which causes the refrigerator, which seemingly is in good condition during cool weather, to "break down" in summer.

By noting a few of the changes wrought in refrigerators in the past few years, mostly minor variations, it is easy to see that an increase in efficiency is usually possible through scientific analysis and adjustment.

Let's list some of these recent changes and explain them:

Compressor designs now utilize an improved metal.

Controls utilize a mercury tube for electrical switching.

Cooling units are made non-corrosive and of continuous fin type coils.

Cylinder heads are cooled by water or refrigerant gas.

"Dry" systems replace "flooded," or "low-side float" type coils.

Expansion valves better control the gas flow—accurate control was difficult with low side float valves.

Motors are specially designed to give quiet, efficient and dependable performance.

Compressors

Twenty years' experience has taught the leading manufacturers that an electric refrigerating machine must be built with the accuracy of a fine watch, if it is to give the owner a great many years of carefree service. The accuracy of the component parts of a present day compressor is three times as great as that of the finest automobile.

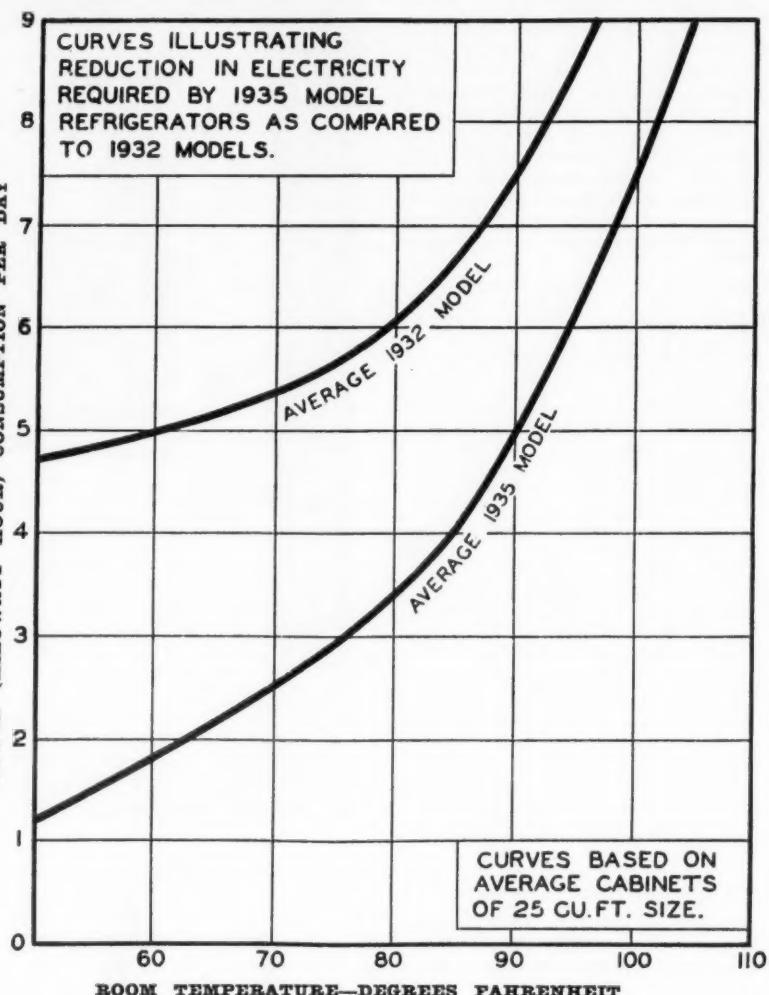
Inefficiency in a compressor may be the result of wear on any one, or several of the following parts: worn pistons, cylinder walls, rings, and suction or discharge valves.

These parts are now made out of better grades of metal than formerly. They may be machined to closer limits and wearing is reduced to a minimum. Worn parts in a compressor—like leaks in "the old oaken bucket"—allow compressed gas to leak into the crank case, and the job of pumping heat is made more difficult and costly.

A balanced crank shaft made of drop forged steel tends to cut down the vibration, noises, and friction losses in a compressor. The pistons and cylinders are now made of the same kind of metal in order that the ratio of expansion between them will be the same. This eliminates binding and reduces friction when the compressor is operating at a high temperature.

Another improvement was made when the suction valve was taken

New Units Use Less Electricity



This chart indicates the difference between the average 1932 electric refrigeration system and the average 1935 model system, as measured in operating costs. For example: a 1932 model refrigeration system serving a 25 cu. ft. cabinet and operating in a room where the temperature is 80° F., will use about six kilowatt hours (6 kwh.) per day, whereas, a 1935 model refrigeration system—or an old system serviced and brought up-to-date—would use only about 3½ kwh. per day.

from the head of the piston and placed in the compressor head valve plate. This feature reduces the wear on the suction valve to a minimum, permits a closer head clearance, hence increased efficiency, and eliminates the necessity of passing the refrigerant gas through the crank case.

Compressor Head Cooling

The factor that has tended to increase to the greatest extent the efficiency of a compressor is the method of cooling the compressor head. Efficient cooling of the compressor head prevents carbonization of the oil and prevents the re-expansion of refrigerant gas.

One manufacturer has developed a refrigerant gas cooled compressor that increases the efficiency of the compressor by six per cent over the obsolete compressor with no method of cooling.

Other manufacturers use the water cooled head which accomplishes the same purpose.

By the installation of an inexpensive refrigerant cooled or water cooled compressor head, the efficiency of an obsolete compressor may be increased by at least six per cent. This would be an important factor in lowering operating costs . . . and in increasing savings.

Cooling Units

During recent years the trend of most manufacturers has been toward the dry system. This necessitated the re-design of cooling units, and many advantages resulted.

The flooded system required a relatively large amount of refrigerant, the flow of which was controlled by a float valve. The dry system uses a relatively small amount of refrigerant, the flow of which is controlled by a thermostatic expansion valve.

The cooling units in a dry system operate on a defrosting cycle; that is, they frost up and then defrost before frosting again. They are capable of maintaining a more even temperature in the storage compartment.

The sole purpose of the cooling unit is to absorb the heat out of the food or storage compartment, so that it may be removed to the outside. The newer type cooling unit is constructed of a continuous length of copper tubing; specially shaped continuous fins are soldered to the copper tubing with pure tin. This construction provides a maximum heat transfer and eliminates the corrosive action of air, moisture, or food acids.

Any flooded system can be changed over to a dry system with greatly improved efficiency by the purchase of the proper cooling units and expansion valves. Hence, for a small initial cost, you may improve the efficiency, eliminate defrosting troubles, lower the operating cost, and improve temperature control of your refrigeration system.

Controls

The control is an important item, because it is the means by which we may reach the standards of refrigerator efficiency established by exper-

load and affords finer temperature adjustments.

Motors have been developed to give quiet, efficient, and dependable performance. They are built for low current consumption, unusually high starting torque, ability to start under heavy overload and ability to operate under low and fluctuating voltages. Radio interference and light flicker are practically eliminated by using motors of this type. The efficiency of a motor can be determined by using a voltmeter, wattmeter, and ammeter.

Types of Water Valves

There are two types of valves used on water cooled compressors—the pressure type and electric type. The purpose is to regulate the flow of water necessary to cool the compressor head and refrigerant gas in the condenser.

The electric valve operates only while the condensing unit is in operation. It is not capable of maintaining a constant compressor head pressure.

The pressure type water valve is actuated by the pressure of the gas in the compressor head. It is capable of maintaining a constant pressure at this point.

The flow of water must be correctly regulated if the condensing unit is to operate economically. If water flow is insufficient, the condensing unit will run all the time; if it is excessive, water bill will be high.

Other Causes of Inefficiency

Low side float valve systems have a tendency to become oil bound and will not refrigerate properly. "Ebulators" can be installed as a remedy. Ebulators are small wooden ticks which fit into the cooling coils of the evaporator. They cause the refrigerant gas to boil violently in the bottom of the cooling unit, thus preventing the oil from filling the lower part of the evaporator.

Inefficiency in a refrigerator may also be caused by air in the system, slipping belts, dirty condensers—inside, as well as outside—carbonized oil and dirty refrigerant gas.

Lastly, if there is any heat leakage in the refrigerator box or display cases, the operating cost will be greater. Heat leakage may result from insufficient insulation, ill fitting door gaskets, or worn door latches. If the heat leakage is more than normal, it is obvious that the condensing unit must run more in order to keep the correct temperature.

Commercial refrigeration equipment should be checked according to the items listed below:

Cooler or Case	Hardware
	Door Gasket
	Temperature
Cooling Units	Type
	Condition
Compressor	Efficiency
	Oil (sample)
	Belt
Motor	Oil
	Bearings
	End play
	Brushes and Commutator
Condenser Pressure	Control
Suction Pressure	Power Drawn
Size Suction Line	
Control	
Power Drawn	



STYLES HAVE CHANGED

in fittings as well as in men's attire

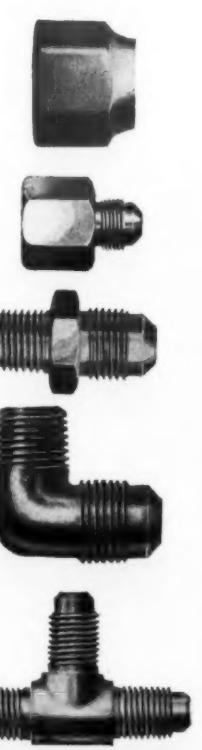
Yes, they change in the fitting business as well as in any other. During the 22 year's experience that Commonwealth has had with the refrigeration industry, the style of fitting in vogue has undergone many revisions.

Today, Commonwealth's line of fittings is perhaps the most complete in the industry, in that every type, size and style of fitting is fabricated here.

Fittings for tubing sizes from 3/16 in. to 3/4 in. are available in stock, including every intermediate size. Larger sizes are available to order.

We supply leaders of the refrigeration business with seepage-proof fittings made from hot forged brass and extruded rod, every piece 100% inspected, tube seats protected in shipping and all threads accurately cut.

Fitting of special design produced rapidly. Quotations promptly upon receipt of sample, blue print, or sketch.



COMMONWEALTH BRASS CORP.
Commonwealth at G.T.R.R. Detroit, Mich.

Approved for RETAIL STORES



V-METH-L
VIRGINIA SMELTING

(Virginia Methyl Chloride)

Saves money—can be used with flange-jointed copper tubing, which costs much less than the welded steel construction needed for ammonia.

Its low boiling point, -10.6° F.; its freedom from moisture and acidity; its uniform quality; all commend it for use in ice cream cabinets, refrigerated showcases, store refrigerators, etc.

Made by the makers of EXTRA DRY ESOTOO, it is stocked at 49 convenient distributing points, assuring prompt deliveries. Shipped in containers of 1200, 90, 6 and 3½ lbs. Interesting literature will be mailed upon receipt of the coupon.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

MAIL THIS COUPON NOW!

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass.
Send me the literature you have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.

Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide)
 Folder: V-METH-L (Virginia Methyl Chloride)
 Folder: Transferring from large to small cylinders
 Circular: Physical properties of various refrigerants

Name
Street & No.
City & State

ERN-2-13-35

COMMERCIAL REFRIGERATION

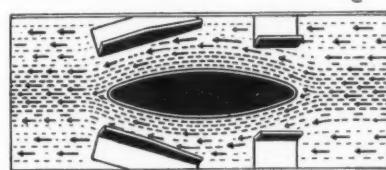
Unit Cooler Employs Oval-Shaped Tubing

MILFORD, Conn.—A unit cooler for commercial applications that is distinguished by the use of "streamlined" or oval-shaped refrigerant tubing is being manufactured and marketed by the Reeves Engineering Co. of this city.

In addition to having "streamlined" tubing, the Reeves forced-convection cooler has fins that are constructed with small baffles, which guide the air flow around the tubing with very little turbulence.

According to Edwin A. Reeves, head of the company making these units, the advantage of the "streamlined" tubing lies in the fact that in evaporators with round tubing equipped

Streamlined Coil



Arrows show course of air flow over the oval tubing as directed by the small baffle plates.

with ordinary fins, air comes in contact with only one-quarter of the surface of the tube directly in the path of the air, and that, on the other three-quarters of the surface of the tube, there is a partial vacuum.

It is the contention of Mr. Reeves that water condensing and frost forming on the part of the tubes and fins where there is no air contact causes a "drying out" action. Therefore, one of the principal claims made for the Reeves cooler is that it maintains an average relative humidity of around 90 per cent.

The small baffle plates that are tangent to each fin direct the flow of air over the entire surface of the tubes.

The Reeves unit cooler employs a slow-speed six-blade fan. It is powered by a 1/50-hp. capacitor motor, with speed adjustable in the range from 700 to 1,000 r.p.m.

Tubing is made of copper as are the fins, which are dip soldered to the tubes. Each soldered joint on the coil is protected with a copper ferrule.

The entire case, including the hangers and motor bracket, is of cast aluminum.

Mills Novelty Builds Addition to Plant

CHICAGO—Imperial Brass Mfg. Co. of this city has added "Sylpak" shut-off valves to its line of refrigeration valves, fittings, and tools.

The siphon principle is employed in this new Imperial valve, and while the valve is in operation, it is possible to change the siphon in case of a rupture while the valve is under pressure, without loss of the refrigerant.

The siphon is also protected at all times while the valve is in operation. According to Imperial officials, in actual tests the siphons were able to withstand more than 100,000 cycles of oscillation without a rupture.

The brass forged body of the valve is non-porous and has two flat sides, affording substantial wrench surface for assembly purposes. The diameter of the hand wheel is 2 1/4 in. All valves are made with full size openings.

6 Exclusive Sales Features of

HAVEN

MILK COOLER:

1. Patented liquid measuring device is trouble-proof—no adjustments needed—can not be overloaded!
2. No needle valves, compressor valves, belts, crankshafts, connecting rods, piston rings, cylinder side-thrust, delicate mechanisms—NONE!
3. Double-acting compressor actually improves with use! NO compression loss.
4. Simplest, sturdiest compressing unit of any electric refrigeration system! DIRECT DRIVE!
5. Customer satisfaction assured with Haven's simple design, rugged construction, no delicate complicated parts, new basic compression method!
6. Pays YOU a BETTER PROFIT because a Haven eliminates usual causes of servicing.

WRITE today for information on territory, prices—and how you can cash in on Haven dealership, handling America's fastest selling milk cooler and commercial line of high sides from 1/4 to 1 1/2 H.P. HURRY.

Household Refrigerator Conditions Copied in Storage Room

YORK, Pa.—York Ice Machinery Corp. recently installed refrigerating equipment in a large cold storage room of the Strickler Produce Co. here, in which atmospheric conditions existing within the household electric refrigerator were duplicated for the purpose of providing wholesale storage of leafy vegetables and fruits.

The storage room measures 30 ft. x 13 ft. x 10 ft. It is lined with 3/4 in. hard plaster and insulated with 4 and 6 in. of cork. The room has insulated internal swinging doors, to permit trucking and an outside York cold storage door.

To maintain a temperature within the chamber of 34 to 36° for the four tons of fruits and vegetables moved in and out of the storage room daily, a York 3-cylinder, 3-hp. Freon water-cooled condensing unit has been installed, with five sections of square finned cooling coils, equipped with individually controlled expansion valves.

One and three-quarters feet of coil surface are provided for every foot of outside box surface. This ratio operates the coils at approximately 10° F. below box temperature, and although not baffled, the coils do not collect much frost.

Storage facilities will cool four tons of produce from 80 to 35° F. in 24 hours.

Auto Motor Drives Unit For Cheese Factory

LANCASTER, Pa.—Diller & Clark, Kelvinator dealer in Kinzer and Intercourse, Pa., recently used an automobile engine as a source of power for a Kelvinator refrigeration unit in an installation for the Lancaster County Swiss Cheese Co. here.

The engine was mounted on a base outside the building and connected so as to drive a line shaft running to the condensing unit inside. Although the motor must be started by hand, all temperature and safety controls are connected to the ignition of the engine.

Kelvinator equipment is used for the cooling, curing, and preservation of Swiss cheese which is made in 100-lb. cakes. One hundred cakes may be stored in the cooler at one time. A brine vat is used to cool the cheese and to aid in forming the rind. A butter storage compartment 12x12x16 is also refrigerated by the same unit.

Special Frigidaire Used By African Hunters

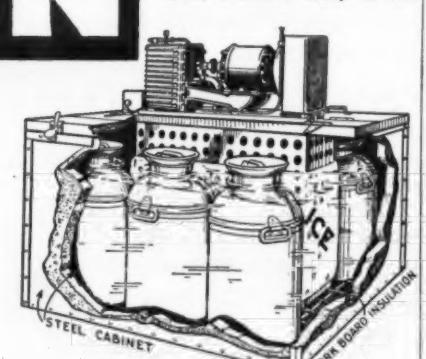
ATLANTA—A specially built Frigidaire refrigeration unit made it possible for Mr. and Mrs. Martin Johnson, famed African explorers, to have ice cold Coca-Cola in the wilds of Africa.

The small refrigerating machine, with the compressor powered by a one-cylinder engine, was taken along on their aerial expedition to Africa when the wild animal sound picture "Baboon" was being filmed.

In a letter to the Coca Cola Co. headquarters here, Mr. Johnson wrote from his headquarters in Africa as follows:

"We have a small ice machine, made for us by Frigidaire. It runs on a one-cylinder engine, the same machine we use for charging our moving picture sound batteries. With this ice we have as good a drink away off in the blue as you can get any place in America."

The Haven Oscillating and Reciprocating Compressor is one of many EXCLUSIVE features of the Haven Milk Cooling Unit, furnished ready to use.



THE HAVEN COMPANY
530 West Lapham Street, Milwaukee, Wisconsin.

Unit for Tap Room Assembled at Shop Before Installation

KANSAS CITY—Product Manager H. J. Engbrecht of Midwest Electric Appliances, local General Electric distributor, has made an unusual and extremely compact installation for the Rosenfield Tap Rooms, Inc., in the Stats Hotel building here.

Equipment installed consists of complete compressor, beer pump, surge tank, adjustable controls and switches, all assembled in one complete unit. The assembly was designed in the shop of the distributor.

The brackets to which the control panel is attached also form the base upon which both compressors rest. All tubing, manifolds, and connections were made in the shop before delivery and it was necessary only to attach the suction, liquid, and water lines to the machine when installing it.

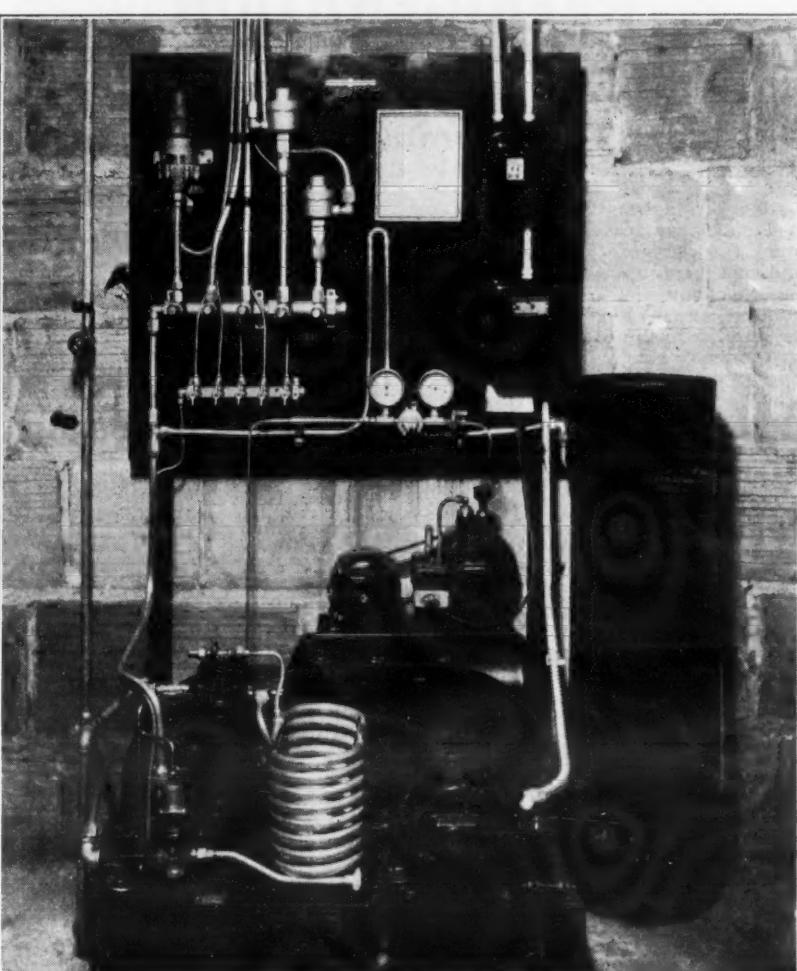
Equipment installed was designed to refrigerate two Russ beer dispensers, two slide top semi-immersed soft drink bottle cabinets, and one walk-in cooler refrigerated by a G-E "conditioned-air" evaporator.

Kelvinator Adds New Units To Military Academy Job

GULFPORT, Miss.—To handle the need of the kitchens, store rooms, pantries, and bakery of the Gulf Coast Military Academy here, new Kelvinator commercial refrigeration equipment was installed recently by the Mississippi Power Co., Kelvinator distributor for Gulfport.

The new equipment replaces former Kelvinator equipment which had been installed several years ago, but which growth of the school had made inadequate.

'Package' Commercial System



For a beer cooling and food refrigeration installation the Kansas City G-E distributor assembled as one unit on a single frame the equipment shown above and described in the adjoining column.

PERMANENCE

The size and stability of Servel is firm assurance to the dealer of Servel's permanence—of its ample facilities to build a product second to none—of the vast resources it can command in marketing its product. The 30-acre Servel factory is one of the largest and most modern industrial institutions in the world—the outward sign of Servel's ability to meet the demands of tomorrow as well as today.

SERVEL

COMMERCIAL REFRIGERATION

SERVEL, INC. Commercial Refrigeration Division EVANSVILLE, IND.

This great modern 30-acre plant is the home of Servel Commercial Refrigeration and the world-famous Electrolux, the Servel Gas Refrigerator



There is no Substitute for Experience

COMMERCIAL REFRIGERATION

Temprite Cools Beer In Modern Tap Room

ATLANTA — Jack's Tap Room, Broad and Marietta Sts. here, is an "all-electric" tap room, with electrically operated refrigeration, cooking, and liquid-cooling equipment.

Liquid cooling is accomplished with Temprite units, one double tap for beer and two single units for water. Refrigerated storage space is arranged for two half-barrels while two bottled beer compartments are built into the bar proper.

Food refrigerators are of the counter type consisting of a 6-ft. salad counter with refrigerated salad pan top. A general storage refrigerator is built into the back-bar. All refrigeration equipment is connected to a 1-hp. water-cooled condensing unit.

Storage space in the counter-type refrigerators is conserved by the use of narrow vertical fin-type coils mounted behind each door.

Other electrical equipment includes the following appliances: one heavy-duty range with oven; two 30-gal. water heaters in series; one toaster; three electrical steam table units; one coffee urn unit; one griddle; and a fry kettle.

York Equips English Ice Cream Plant

YORK, Pa.—Outstanding foreign refrigeration installation made by York Ice Machinery Corp. during 1934, was the complete refrigerating system for J. Lyons & Co. ice cream plant in England.

Big Volume RURAL MARKET for APPLIANCE DEALERS



Farm buying power is up. There is a waiting, practically virgin market for these Waukesha products—logical, rural market profit leaders for appliance dealers. Each unit is package merchandise, with simple minimum service requirements. No increase in facilities necessary.

These products offer a rich opportunity for extra profits. They are distinctive.

THEY FILL A DEFINITE NEED

The Self-powered Refrigerator is a marvel of modern efficiency and convenience. It operates quietly and with surprising economy. The Milk Cooler is portable—powered with the Waukesha Gasoline Ice Engine or the Waukesha Electric Ice Motor. The only Milk Cooler with power-driven directional water agitator. The milk is stirred by thermal action without opening the cans. Cooling milk quickly to 50° gets high-test milk and better milk prices. It's a paying investment for dairymen.

Investigate this opportunity today. Valuable territory is still open. Write for literature and details of franchise.

Refrigeration Division
WAUKESHA MOTOR COMPANY
Department N Waukesha, Wisconsin

York System Used in Apartment Hotel In Shanghai

SHANGHAI — Refrigeration equipment to handle the complete food storage and water cooling requirements of the apartment hotel of the Joint Savings Society here was recently installed by York Shipley, Ltd., the Shanghai branch of the York Ice Machinery Corp. Total refrigerating capacity of the system, which also includes air conditioning, is 80 tons.

Refrigeration equipment consists of York compressor units of the two-cylinder, vertical single-acting type, condensers of the shell-and-tube type, and brine cooling equipment, located in the sub-basement of the building.

Pumped from Brine Cooler

Brine is pumped from the brine coolers to the various refrigerated spaces. For air-conditioning service, this brine is circulated at an average temperature of 35° F., while the brine for the cold storage refrigeration and water cooling systems is circulated at 15° F.

The circuit of the 35° F. brine is from a brine pump of 400 gallons per minute capacity to air washer coils in the basement and on the second and fourteenth floors, and back by gravity to the brine cooler located in the basement.

Spaces Refrigerated

The 15° F. brine is likewise pumped from, and returns to, its own brine cooler in the basement. During the circuit, the system cools the following spaces:

Second floor—One 129-cu. ft. and one 40-cu. ft. refrigerator in the pantry.

Third floor—Four large walk-in cold storage rooms of approximately 400 cu. ft. each adjoining the kitchen; one 40-cu. ft. bakery refrigerator; on 40-qt. ice cream freezer; one 120-cu. ft. kitchen refrigerator; two 60-cu. ft. kitchen refrigerators; one 30-cu. ft. bottle cooler for the cocktail bar and lounge; one 50-cu. ft. draft beer cooler for cocktail bar and lounge.

Upper Floor Equipment

Fourth to fifteenth floors inclusive—eleven 12-cu. ft. refrigerators in service rooms; one 50-cu. ft. draft beer cooler; one 60-cu. ft. bottle cooler at service counter; one 70-cu. ft. pantry refrigerator.

Twenty-first floor—one drinking water cooler, which supplies refrigerated water to 18 taps, each located on different floors.

The walk-in refrigerator rooms adjoining the third floor kitchen are cooled by means of wall-type galvanized steel 3/4-in. pipe coils and each room is equipped with a dial thermometer which is placed in the lobby outside the room and just over the cold storage door.

Brine Lines Insulated

All brine pipe lines are cork insulated to a thickness of 2 1/2 in. and travel in risers from the sub-basement to a point 245 ft. above the street level in the front tower of the building, and 198 feet above street level in the rear tower.

Each of the small built-in refrigerator boxes in the service rooms is provided with an ice cube maker and cooling unit through which brine circulates. The boxes are lined with zinc, and the exterior is covered with white tile.

Cork Code Changes Get Approval

WASHINGTON, D. C.—Approval of an amendment to the Cork Industry code providing for a merchandising plan supplemental to the code's price-publicity provisions, to become effective Jan. 30, has been announced by the National Industrial Recovery Board.

Purposes of the amendment are as follows:

To change the code provision regarding filing of merchandising plans which require the filing of prices and elimination of a waiting period between the filing date and the effective date of the prices;

To prohibit sales at prices other than those filed;

To require members of the industry to enter into agreement with their distributors under which the distributors will be required to file their prices and will be prohibited from selling at other than those so filed;

To define the words "price terms."

The merchandising plan was approved on condition that the board may hold a further hearing on any provisions of the plan within 90 days from date of approval, and that any order which it may make after such hearing shall have the effect of a condition on the approval of the plan.

York Export Sales Improve in 1934

YORK, Pa.—Sales in 1934 through the York export division were better than any period since the fiscal year of 1930-1931, reports J. C. Tweedell, factory representative, export division, York Ice Machinery Corp.

Due to recovery in durable goods throughout Europe, Asia, Africa, and South America, extensive foreign markets for American refrigerating and air-conditioning equipment will be opened up, he believes.

Australia and the Argentine were favorably affected, he says, by the drought and crop conditions in the United States during the summer of 1934, in that they can compete in the world wheat and meat markets and obtain a good price for their products.

This world market "will undoubtedly provide them with the necessary foreign exchange to import manufactured materials such as American refrigerating and air-conditioning equipment," asserts Mr. Tweedell.

"In England, conditions are particularly favorable, the government is operating on a balanced budget, new building construction is proceeding at a very promising rate, and their imports of American commercial refrigerating equipment for 1934 show an increase over all previous years."

With regard to other countries he says: "South Africa, with a high price set on gold, is another particularly bright spot in the export field. Cuba, with a new reciprocal trade agreement with the United States, and a reduced tariff on sugar, should provide a decided stimulus in dealings with that country."

"Conditions in Mexico have been improving rapidly in the past year, and that country, now politically stable, is one of the best markets for American refrigerating equipment."

Lewis Air Conditioners, Inc. Moves to McQuay Plant

MINNEAPOLIS—Lewis Air Conditioners, Inc., manufacturer of air-conditioning and humidifying equipment, recently moved into its new quarters in the factory of the McQuay Corp., manufacturer of radiators and refrigeration coils. The space leased represents approximately one-fourth of the factory, but the Lewis company will have the privilege of using any or all of the machinery in the plant.

Among the Lewis company's present products are direct reading hydrometers, room-humidifying units which are sold through the retail trade over the United States, humidity controls which are sold to manufacturers of air-conditioning equipment, cabinet equipment for winter humidification and cooling in summer, and basement air-conditioning systems.

Hotel Has Refrigerator For Each Different Kind of Wine

KANSAS CITY—Each refrigerator door in the wine room of the Hotel Muehlebach here has on it the name of the contents and the temperature at which the contents should be kept.

The champagne box specifies a low of 39° F. and a high of 55° F., according to Gus Ashem in charge of the wine department. The sign reads "Keep me dark or I will spoil. Please watch me."

On the box labeled "Imported Wines" is the caution "Light hurts all wines." The temperature range is specified as low 40° F. and high 45° F. Temperature range for the beer and mineral water refrigerator is specified as a low of 34° F. and a high of 40° F.

Bins in the refrigerator are built in diamond shape and have a 3/4 in. pitch to the back, to keep bottles from sliding out when stacked full in the bin. Coils are built along the wall, back of the bins, and keep the whole stock at serving temperature. Beer cooler capacity is 48 bottles per bin.

EARNINGS

Volume for
Year 1934

Retail Auto Notes	\$224,819,362
Wholesale Auto Acceptances....	259,000,608
Textile Factoring Accounts....	254,972,370
Other Industrial Receivables....	38,995,174
All Foreign Receivables.....	1,961,734
Total	\$779,749,248

The consolidated balance sheet as of Dec. 31, 1934 shows total current assets of \$226,033,016 compared with current liabilities of \$114,370,799. Cash on hand at the end of the year amounted to \$30,032,952.

Central System Conditions Windowless Office

WALLINGFORD, Conn.—Due to its location on a sand plain, Wallingford Steel Co. here has constructed a windowless, air conditioned office building.

Conditioned air is supplied by a central system with distribution ducts, all mechanical apparatus being located in the basement. The year-round system cools and dehumidifies in summer and heats and humidifies in winter.

The building has one small window, placed beside the front door for use as a lookout by the gate operator, who controls the automatic gate giving access to the grounds. The lookout window is sealed, with double glass, enclosing a 6-in. space.

A PERMANENTLY TIGHT CONNECTION

VIBRATION

Can not loosen it

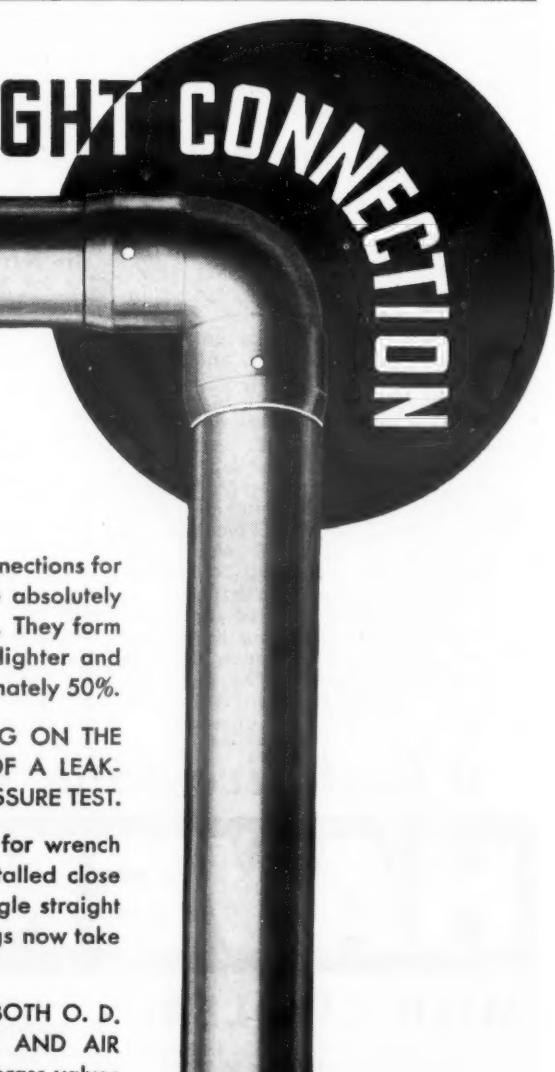
THE use of STREAMLINE fittings assures permanently tight connections for electric refrigeration and air conditioning work. They are absolutely refrigerant and seep-proof. Vibration cannot work them loose. They form a connection actually stronger than the tubing—yet much lighter and more quickly completed. They reduce your fitting cost approximately 50%.

THE STREAMLINE FITTING IS THE ONLY SOLDER TYPE FITTING ON THE MARKET THAT FURNISHES ITS OWN VISUAL ASSURANCE OF A LEAK-PROOF, PERFECTLY BONDED JOINT WITHOUT AN ACTUAL PRESSURE TEST.

STREAMLINE fittings are space savers. No room is required for wrench handling as is necessary with flared fittings. Lines may be installed close up to each other and connected in a minimum of space. A single straight tube of hard drawn copper connected with STREAMLINE fittings now take the place of multiple lines of parallel small tubes.

STREAMLINE FORGED BRASS FITTINGS ARE FURNISHED IN BOTH O. D. AND NOMINAL SIZES FOR MECHANICAL REFRIGERATION AND AIR CONDITIONING. We manufacture a complete line of forged brass valves and fittings of every type.

SEND FOR CATALOG R-2 AND OUR LATEST PRICE LIST APPLYING TO FORGED AND WROUGHT BRASS STREAMLINE FITTINGS FOR MECHANICAL REFRIGERATION AND AIR CONDITIONING.



Mueller Brass Co.

PORT HURON, MICHIGAN

To Assist Dealers

W. J. Aulsebrook

Aulsebrook to Head Servel Department

EVANSVILLE, Ind.—W. J. Aulsebrook, former sales engineer of Servel, Inc., is now manager of the applications department of the commercial refrigeration division, reports Harry Newcomb, general manager.

The applications department assists distributors and dealers in sales engineering and application of commercial refrigeration products.

During his nine years with Servel, Mr. Aulsebrook has traveled through 38 states, assisting distributors in engineering work and collecting performance data.

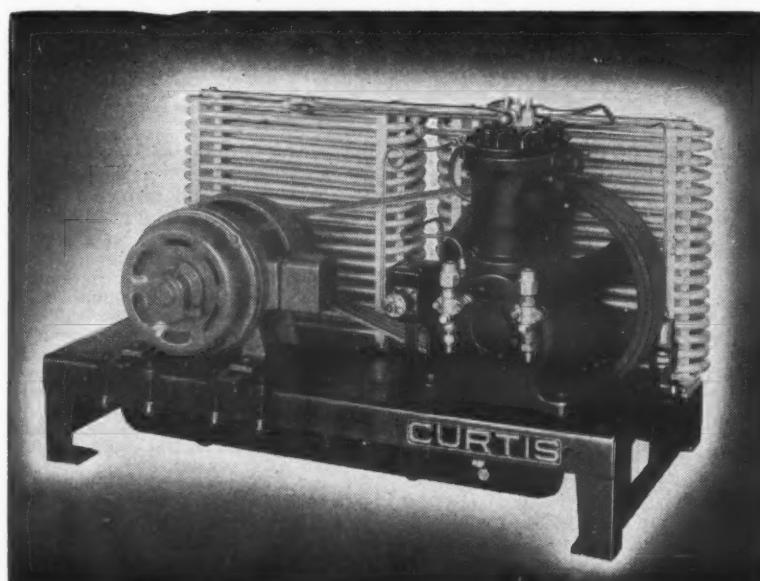
Portable Display Case Moved Around Store

BOSTON—A six-foot double-duty portable display case with a Kelvinator unit installed in one end, is being utilized to build increased sales by Rival Foods, Inc., a cooperative grocery chain with several hundred members in this city.

This self-contained refrigerated display case can be moved from one location to another in the store to ascertain the best sales position. The case was built according to the specifications and design of Phil White, Kelvinator engineer in Boston.

Ice-O-Matic Equipment Shown Restauranteurs

PITTSBURGH—Rutledge Sales Co., Williams Ice-O-Matic distributor for this city, exhibited Ice-O-Matic equipment, including household refrigerator models, commercial units, cut-away compressors, and the Williams air-conditioning system at the second annual exposition of the Western Pennsylvania Restaurant Association.

**CURTIS REFRIGERATION**
Units to fit every need

CURTIS, one of the oldest compressor manufacturers, offers one of the most complete lines of refrigerating units—1/6th to 2 H.P. air cooled; 1/3rd to 5 H.P. water cooled—reflecting 80 years engineering, designing and manufacturing experience. Some desirable territories are still open for reliable distributors. Write for details.

81
SUCCESSFUL
YEARS
ESTABLISHED
1854

CURTIS

Curtis Refrigerating Machine Co.
Division of Curtis Manufacturing Co.
1912 Kienlen Ave., St. Louis, U.S.A.
318H Hudson Terminal New York City

Temprite Sales Gain 20% Over Best Year

DETROIT—Net sales of Temprite Products Corp. for 1934 showed a 20 per cent increase over sales for 1933, the best previous year in the company's history, William R. Clark, general manager, reported last week.

Mr. Clark also stated that sales in the winter months have shown considerable improvement, resulted in a balanced annual activity tending to modify sales peaks.

Temprite is incorporating a number of refinements in its 1935 models and has a variety of new designs covering additional applications of mechanical equipment to liquid cooling, according to the general manager.

Jobbers Study Use Of Pre-Cooling

SAN FRANCISCO—When 3,000 fruit jobbers from all parts of the United States met here for their annual convention, one of the chief topics of discussion was pre-cooling, a refrigeration process which, until three years ago, was only a theory.

Last year, 50 per cent of the 300,000 carloads of fresh fruit and vegetables shipped out of California were precooled. This year the percentage is expected to be still larger.

Although more expensive than standard refrigeration, pre-cooling experts say, benefits the shipper in two ways: he packs a larger load, saving freight charges; and his fruit, more fully ripened, is of better quality and brings a better price in the eastern markets.

Basic patent on pre-cooling is held by the University of California. The application of it is simple.

Under ordinary refrigerator-car shipment, the natural circulation of air around the ice is relied upon to reduce the temperature. Because it took some time to bring the temperature down, fruit was picked greener to allow for continuation of the ripening process enroute. Fruit generates heat within itself when ripening—important to remember when dealing with carload lots.

In pre-cooling, the car is iced and loaded, then air is forced through it by fans. This forced circulation lowers the temperature, and the fruit leaves California cold, and stays cold until it reaches its destination.

Field tests have shown that it is comparatively easy to produce a uniform temperature, and to pre-cool the fruit through to the center. Some shippers seal the car, ice it no more across the continent. Others continue standard icing.

Hill Refrigerators Used In New Loft Store

WHITE PLAINS, N. Y.—The new super-market opened here by the Loft chain of stores is equipped throughout with commercial refrigerator equipment and store fixtures installed by the C. V. Hill Co.

Servel Puts Its Units on a Pedestal

Servel units which operate in the building of the Young Men's Hebrew Association at Lexington Ave. and 92nd St., New York City, are neatly mounted on a concrete base and surrounded by a guard rail.

Glass-Fronted Keg Room Shows Patrons of Dutch Kitchen How Beer Is Cooled

YORK, Pa.—A glass-fronted keg room which enables customers to see beer, ale, and porter being drawn "straight from the wood" of five large half-barrels, is being utilized by Miss Mary Strausbaugh, proprietor of the Dutch Kitchen, new restaurant and taproom here.

Miss Strausbaugh had a storage room built directly behind the bar with a triple-plate glass window in

the center of the storage compartment directly behind the serving counter and on a level with the eye.

The storage room is a refrigerator, 16 ft. long, 4 ft. wide, and 7½ ft. high. It is built in 10 sections for portability. Through this room, below the window level and out of sight of patrons, extend 14-in. copper tap spigots.

The room is equipped with a stand-

ard York cold storage door, 30 in. x 6 ft. x 6 in. A uniform temperature, ranging from 35 to 37° F. is maintained by a York ½-hp. Freon air-cooled condensing unit, located in the basement, and 345 ft. of square finned coil surface in the storage room.

The coil surface gives enough refrigeration for 15 half-barrels of beer and ale, six cases of bottled beer, and part of the meat and sea food used by the Dutch Kitchen.

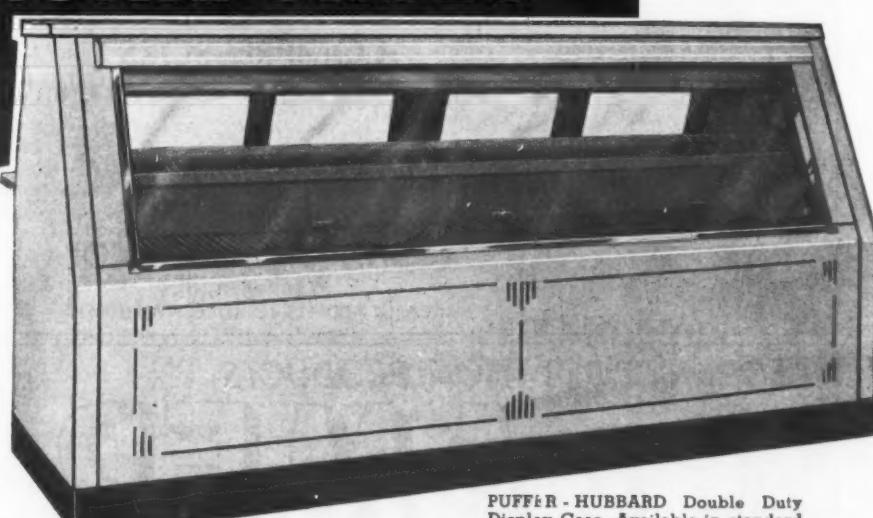
The storage room and refrigerating equipment were installed by the local distributor of York commercial refrigerating equipment.

1935

PUFFER-HUBBARD

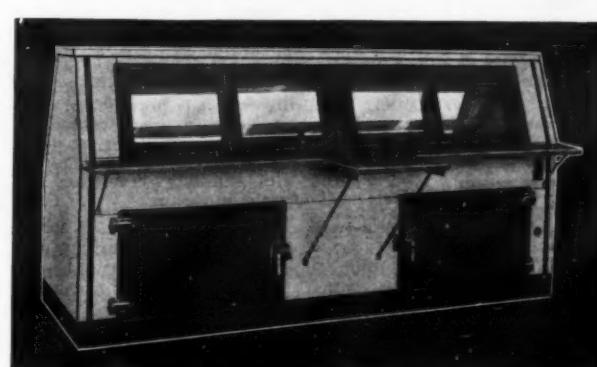
UTILITY

COMMERCIAL CASES

**SPECIFICATIONS**

EXTERIOR: S. Line—Top, reflector and kickboard Porcelain... Balance high baked Dulux. S. P. Line—All Porcelain except back, which is high baked Dulux. INTERIOR: S. and S. P. Line—Visible space Porcelain. INSULATION: 3" Armstrong cork-board... HARDWARE: Heavy brass, chrome plated. DOORS and FRAMES: Hard rubber... GLASS: Triple ¼" in front, ventilated for clear vision. GLASS MOULDING: Stainless steel. COIL BAFFLES: Double insulated with direct center air flow.

PUFFER-HUBBARD Double Duty Display Case. Available in standard 6, 8 or 10-foot lengths, or to order.



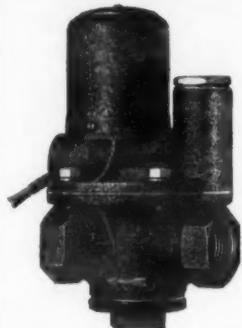
THE 1935 Puffer-Hubbard Commercial Cases spell utility in every sense. Their universal application—wherever refrigerated display is necessary—make them a standard line for all refrigeration sales. Highest quality materials and construction, coupled with their distinctive appearance, places these cases head and shoulders above the field, yet they cost no more. Boost your volume and insure customer satisfaction with the Puffer-Hubbard Line.

PUFFER-HUBBARD MFG. CO.
MINNEAPOLIS · MINNESOTA

BUYER'S GUIDE

MANUFACTURERS SPECIALIZING IN SERVICE
TO THE REFRIGERATION INDUSTRY

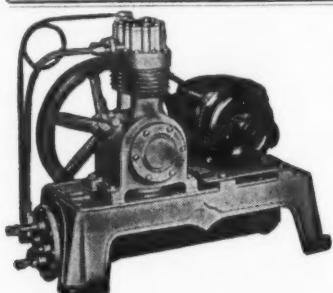
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Payment is required monthly in advance to obtain this special low rate.
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WATER CONTROL

A large capacity valve with a very low power consumption due to the fact that the Model 66 is based on the by-pass principle. Solenoid need only open up small by-pass. Made for $\frac{1}{2}$ " or $\frac{3}{4}$ " pipe connections. Has $\frac{1}{8}$ " orifice and carried in wide voltage ratings. Write for Bulletin 405.

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STARR FREEZE OUTSTANDING PERFORMANCE attested by satisfied users —EVERWHERE!

Sturdy Condensing Units from 80 to 2868 Lbs. I.M.E., and all other commercial refrigeration equipment—Wall type cases with machinery—A beautiful household line of modern, conservative styles—Write for full data.

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Cable "Starr"
Richmond, Indiana (factory) Since 1927
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RANCO THERMOSTAT

The Stainless Steel RANCO KRS fills the replacement needs of practically every household refrigerator, water cooler and ice cream cabinet.

For complete information write for Service Bulletin 628

THE AUTOMATIC RECLOSED CIRCUIT BREAKER COMPANY
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**SHAFTS . . . Crank and Eccentric
for Compressors,
made to YOUR
Specifications.**
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Specializing in the Manufacture of SHAFTS
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**CONDENSING UNITS
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BY
JOMOCO, INC.
A SUBSIDIARY OF THE
JOHNSON MOTOR CO.
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CABLE ADDRESS: JOMOCO-WAUKEGAN

FOR REFRIGERATION PRODUCTS

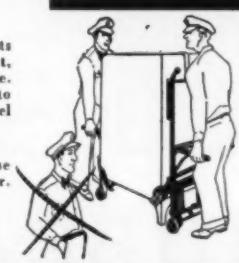
KRAMER
UNIT COOLERS — EVAPORATORS — CONDENSERS
TRENTON AUTO RADIATOR WORKS
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NEW YORK, 210-212 West 65th Street PITTSBURGH, 5114 Liberty Avenue

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because they're built to handle the job.
The heavy duty X-70 Refrigerator Truck (shown) fits all cabinets with or without legs or in the crate. Prevents damage to the cabinet, floor or walls. Only pads touch the cabinet. Sturdy all-steel frame. One truck with top casters and handles for tilting and rolling into delivery truck and on stairs. Complete set \$45.00. Ball bearing swivel casters on one end \$5 extra.

The Balance Refrigerator Truck.
Ideal for heavy boxes, crates, stoves and furniture. Padded nose piece has instant, exact adjustment. Price \$25. Write for free circular.

Self-Lifting Piano Truck Co.
Findlay, Ohio
Manufacturers of Trucks Since 1901



PATENTS

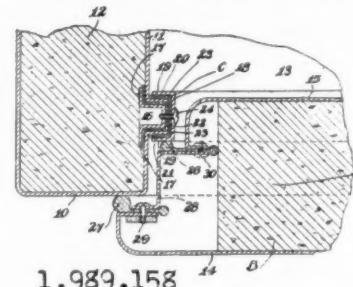
Issued Jan. 29, 1935

1,989,144. COLD CONTROL FOR REFRIGERATING UNITS. Harold F. MacGrath, Detroit, Mich., assignor to Seeger Refrigerator Co., St. Paul, Minn., a corporation of Minnesota. Application Jan. 9, 1930. Serial No. 419,507. 2 Claims. (Cl. 62—103.)

1. A refrigerator including, a refrigerator unit, a compartment for enclosing the same, an inwardly inclined tray-like member at the bottom of said compartment, a perforated bottom in said tray-like member, means for adjustably closing said perforations, and means for catching moisture passing through said perforations.

1,989,158. REFRIGERATOR. Walter G. Seeger and Gustave R. Seeger, St. Paul, Minn., assignors to Seeger Refrigerator Co., St. Paul, Minn., a corporation of Minnesota. Application Jan. 9, 1930. Serial No. 419,522. 8 Claims. (Cl. 220—9.)

2. A refrigerator including, inner and outer metal coverings, outwardly parallel edges thereupon,



1,989,158

externally removable metal connecting strip between said inner and outer coverings enclosing said edges, means insulating said edges from said connecting strip, and means for insulating the inner covering from said outer covering in a manner to prevent heat being conducted by said covering members one to the other.

1,989,228. AIR CONDITIONING APPARATUS. Albert A. Criqui and Roger T. Thornton, Buffalo, N. Y., assignors to Buffalo Forge Co., Buffalo, N. Y., a corporation of New York. Application July 24, 1933. Serial No. 681,865. 2 Claims. (Cl. 261—15.)

1. In an air conditioning apparatus, the combination with a source of heat, heating units connected with such source of heat, and a fan for forcing air through such heating units, of humidifying means located between the fan and the heaters comprising a water tank, heating means located in the water tank for increasing the temperature, and an adjustable mounted air deflector disposed over the tank.

1,989,247. REFRIGERATING APPARATUS. Frederick M. Rooney, New York, N. Y., assignor to Dubuar-Rooney, Inc., New York, N. Y., a corporation of New York. Application April 19, 1932. Serial No. 606,101. 11 Claims. (Cl. 62—101.)

5. A method of refrigeration which consists in spraying under pressure a liquid comprising petroleum spirits onto a solid refrigerant to prevent formation of a frozen film of said petroleum spirits on said refrigerant, and continuously circulating said petroleum spirits from the refrigerant to the region to be cooled.

1,989,263. REFRIGERATOR CAR. Charles David Bonsall, Pittsburgh, Pa., assignor to P. H. Murphy Co., New Kensington, Pa., a corporation of Pennsylvania. Application Sept. 9, 1932. Serial No. 632,279. 5 Claims. (Cl. 108—5.)

1. A refrigerator car comprising side plates, a self-supporting metal roof extending from side plate to side plate, a series of hanger plates embodied in said roof and extending transversely thereof between said side plates, said hanger plates extending below the underside of said roof, wooden strips extending transversely of said car and provided with kerfs adapted to receive the lower portions of said hanger plates, horizontal bolts for removably securing said wooden strips to said hanger plates, and insulation supported on the tops of said wooden strips.

1,989,275. SHELVING FOR OVENS, REFRIGERATORS, AND LIKE COMPARTMENTS. Charles T. Hatch, Albion, Mich., assignor to Union Steel Products Co., Albion, Mich. Application Sept. 29, 1933. Serial No. 691,526. 3 Claims. (Cl. 312—188.)

2. In an oven, refrigerator or like chamber, the combination of inner side walls having outwardly extending top flanges and inwardly extending bottom flanges, an inner top panel overlapping said top flanges and having spaced holes therein, rack supporting units removably disposed on said bottom flanges at the inner sides of said side walls and each consisting of a pair of uprights loosely extending through the holes in said top panel, vertically spaced horizontal rails having out-turned ends spot welded to said uprights, and an inner bottom panel overlapping said bottom flanges and having slots loosely receiving the lower ends of said uprights.

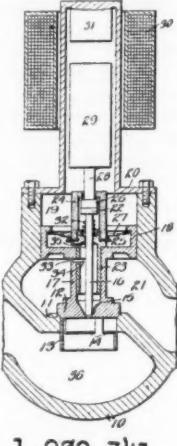
1,989,337. AIR CONDITIONING. Ralph C. Roe, Englewood, N. J. Application June 8, 1933. Serial No. 674,845. 8 Claims. (Cl. 257—9.)

1. A heating and cooling device comprising a hollow partition as part of a building, being a portion of the enclosure of a room contained in said building, said partition having openings near the floor and ceiling each leading from said room to said hollow partition, radiating means installed within said hollow partition, reversible power drivable air circulating means, consisting of two blade screw impellers in pressure accumulative relation with each other, moving room

air through said partition in heat transfer relation with said radiating means, in a downward direction for heating and in an upward direction for cooling said air.

1,989,341. ELECTRICALLY OPERATED VALVE. Francis Shenton, Waynesboro, Pa., assignor to Frick Co., Waynesboro, Pa., a corporation of Pennsylvania. Application Dec. 10, 1932. Serial No. 646,673. 3 Claims. (Cl. 137—139.)

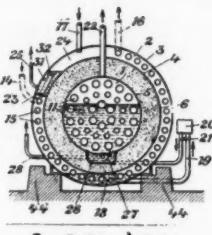
1. A valve assembly comprising a casting having a partition wall therein for dividing it into high pressure and low



1,989,341

ating machines, in combination a condenser comprising tubes and forming the other portion of a closed cylindrical unit, an evaporator having tubes passing these through and being arranged within said condenser and forming the inner portion of said cylindrical unit, the longitudinal axis of said unit as well as the longitudinal axis of said condenser tubes and that of said evaporator tubes being arranged horizontally, so that the liquid level in the condenser is below the evaporator in order that no liquid will run into the evaporator when the refrigerating machine is not operating, and the whole apparatus is rendered suitable for use with compressors of the rotary type.

1. In a condensing and evaporating apparatus particularly for use in refriger-



1,989,430

ating machines, in combination a condenser comprising tubes and forming the other portion of a closed cylindrical unit, an evaporator having tubes passing these through and being arranged within said condenser and forming the inner portion of said cylindrical unit, the longitudinal axis of said unit as well as the longitudinal axis of said condenser tubes and that of said evaporator tubes being arranged horizontally, so that the liquid level in the condenser is below the evaporator in order that no liquid will run into the evaporator when the refrigerating machine is not operating, and the whole apparatus is rendered suitable for use with compressors of the rotary type.

1,989,552. ROTARY COMPRESSOR. Paul E. Good, Riveron, N. J. Application Jan. 3, 1934. Serial No. 705,155. 48 Claims. (Cl. 230—150.)

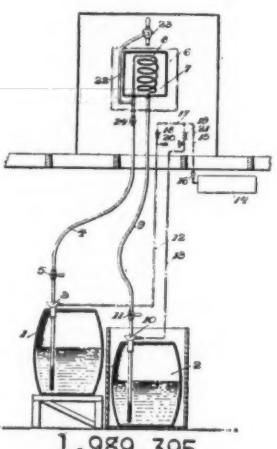
13. In a high speed rotary pump, a rotor having a plurality of spiral grooves symmetrically arranged in a circumferential band, a stator supporting a plurality of symmetrically arranged rotatable barriers having lobes, said grooves being generated by said lobes when the barriers are positioned to intersect the rotor and the barriers and rotor are rotated at constantly proportional speeds whereby in operation of the pump the lobes of the barriers block said grooves during predetermined sectors of rotation of the rotor during which the lobes traverse the grooves from end to end, port means for intake of fluid to and exhaust of fluid from said grooves, the exhaust port means communicating with each groove during at least a portion of that sector of rotation in which the groove is blocked by the lobes.

1,989,609. METHOD AND APPARATUS FOR REFRIGERATION. Edward Rice, Jr., New York, N. Y. Original application July 14, 1930. Serial No. 467,999. Divided and this application Aug. 25, 1934. Serial No. 741,464. 10 Claims. (Cl. 62—91.5.)

1. In apparatus for refrigerating with solid refrigerants, the combination with a refrigerant-containing chamber, of a solid thermal conductor of highly conductive metal extending from said chamber to the space to be refrigerated and presenting to the latter a surface area materially greater than the surface area in contact with the refrigerant body, and means in said chamber for supporting the refrigerant in continuous conductive relation with an upright portion of said conductor, which portion forms a side of said refrigerant-containing chamber.

1,989,636. SYSTEM FOR PRODUCING REFRIGERATION. Harry D. Edwards, Larchmont, N. Y., assignor to The Linde Air Products Co., New York, N. Y., a corporation of Ohio. Application Nov. 20, 1933. Serial No. 608,794. In Cuba April 23, 1932. 17 Claims. (Cl. 62—123.)

1. The method of compressing and expanding a gaseous medium to produce a liquefied gas which comprises a compressor



1,989,395

cepsacle, an instantaneous cooling unit through which the liquid is passed from the supply receptacle to the storage receptacle, a dispensing tap, and conduits connecting said receptacles with said cooling unit and said tap whereby said liquid flows through said cooling unit when flowing both to and from said storage receptacle.

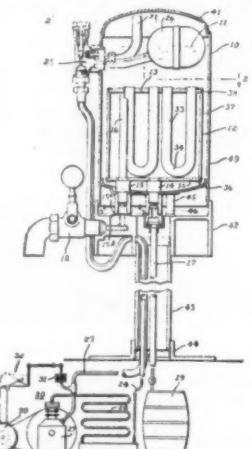
1,989,422. REFRIGERATION. Jesse G. King, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application June 3, 1933. Serial No. 674,240. 11 Claims. (Cl. 62—141.)

1. In a refrigerating apparatus, in combination, a refrigerant casing, a body of volatile liquid refrigerant in said casing,

ing the gaseous medium at a substantially constant rate by means of energy independently supplied, further compressing the compressed medium at a rate which may vary, dividing said further compressed medium in two portions, expanding said portions by doing internal work and external work respectively whereby liquefaction results, utilizing the external work in effecting said further compression, and automatically maintaining the volume of the medium liquefied substantially constant when the ratio of the portion expanded internally to that expanded externally changes.

1,989,653. REFRIGERATING APPARATUS. Harold D. Eiche, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application July 29, 1932. Serial No. 625,783. 8 Claims. (Cl. 220—9.)

5. A refrigerator cabinet including a food storage compartment having spaced apart inner and outer walls, insulation between said walls, an outer panel or shell covering said outer wall, and means for attaching said panel or shell to said outer wall, said means including a depressed portion in said outer wall, a nut in said depressed portion and a bolt engaging said panel or shell and screw-threaded into said nut.



1,989,422

a chamber for liquid to be cooled having a surface exposed to said body of liquid refrigerant, ducts extending into said chamber from said body of liquid refrigerant, inlet and outlet connections on said chamber for liquid to be cooled and means for reducing the pressure on said liquid refrigerant to cause it to volatilize at liquid cooling temperatures.

1,989,430. COMBINED CONDENSING AND EVAPORATING APPARATUS. Oscar Simmen, Erlach, Switzerland, assignor to the firm of Sulzer Freres Societe Anonyme, Winterthur, Switzerland. Application Dec. 22, 1932. Serial No. 648,381. In Switzerland Dec. 24, 1931. 19 Claims. (Cl. 62—115.)

MINNEAPOLIS—New company recently formed in this city is the Refrigeration & Industrial Supply Co., Inc., located at 529 S. Seventh St. The new company will handle refrigeration parts and supply business in the states of Minnesota, North Dakota, South Dakota, and western Wisconsin.

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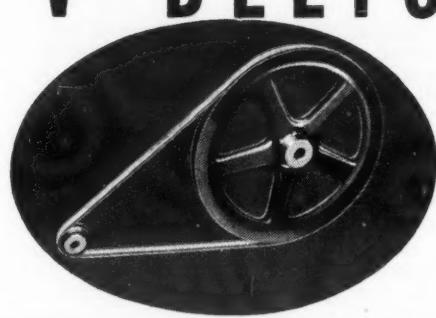
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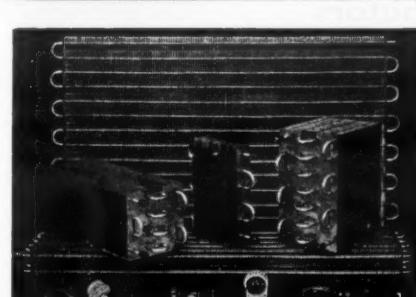


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2-13-35

QUESTIONS

DeFrost Clocks

No. 2061 (Association, Minnesota)—"We would appreciate very much if it would be possible for you to tell us who manufactures the Bryant DeFrost Clocks and where they can be purchased. We understand this is an automatic clock used on refrigerators that automatically turns the defroster switch to defrost the refrigerator."

"If you can supply us with this information it would be greatly appreciated."

Knock Down Cabinets

No. 2062 (Exporter, New York)—"We would greatly appreciate it if you would send us a list of household refrigerator cabinet manufacturers, likely to be interested in the exportation of their products."

"We understand that, some years ago, a firm in Columbus, Ohio, made a knocked down refrigerator, which could be very easily assembled on arrival at foreign destination, but we understand this firm is no longer in business. If you know of any other manufacturers offering such an easily assembled cabinet in knocked down form, we would be particularly interested."

Answer: D. A. Ebinger Sanitary Mfg. Co. and J. Herrel & Sons are the only companies in Columbus, Ohio, who have made cabinets, according to our records. Several years ago Haskelite Mfg. Co., 120 S. La Salle St., Chicago, designed a cabinet made of "Plymet" to be shipped flat and then folded into box form by a local assembler. Production was discontinued.

Surgical Refrigerator

No. 2063 (Surgical Supply Co., New York)—"Can you possibly suggest to us a source of supply for a very, very small size electric refrigerator as small as it is possible to make such an item."

"In fact all we actually require is a refrigerator with capacity no greater than one or two ice cube trays of the ordinary house refrigerator. That is just what we want, with the drawers and no other shelf space."

"If we could find the proper item we would place an initial order for 100 pieces and might eventually develop it to a considerable quantity for our particular purpose."

"Your name has been given to us by the New York representative of the Uniflow Mfg. Co."

Answer: We suggest you try Seeger Refrigerator Co., St. Paul, Minn., which has facilities for quantity production of special designs.

Data on Freon

No. 2064 (Public Utility, Illinois)—"If you will refer to page seventeen of the *Refrigerating Data* book of the American Society of Refrigerating Engineers for 1934-36, you will note that the explosion limits and toxicity for Freon are not listed with the other refrigerants."

"Will it be possible for you to supply the proper figures for Freon to go with this table?"

Answer: An article, "Characteristics of Freon Refrigerant," was published on pages 8, 9, and 10 of the March 21, 1934 issue of ELECTRIC REFRIGERATION NEWS, and will furnish you with the data desired.

Cooke Seals

No. 2065 (Service man, Quebec, Canada)—"I would like some information as to the makers of the Cooke seal, the type used on all makes of Norges. If you can find an agency for them in Canada where I could buy them at wholesale price, I would be very thankful. The last I heard of them they were manufacturing them in Chicago or thereabouts."

Answer: Cooke Seal is now manufactured and sold by the Rotary Seal Co., 800 W. Madison Ave., Chicago, Ill.

Small Air Conditioner

No. 2066 (Reader, Maryland)—"Do you have a reliable list of names and addresses of manufacturers of small air-conditioning units?"

Answer: See below.

No. 2067 (Manufacturer, Illinois)—"We are going to supply one of our pumping units as standard equipment on the air-conditioning equipment of one of the leading manufacturers of this type of equipment."

"We would like to know where we can secure an up-to-date list of the manufacturers of such equipment."

Answer: Specifications of leading makes of air conditioners were published in the Oct. 31 and Nov. 7 issues of ELECTRIC REFRIGERATION NEWS. Naturally, those manufacturers who submitted specifications can be considered as being the most active in the field, so the names of manufacturers taken

from these specifications would represent a reliable list of the leaders in the field.

A complete, up-to-date, and classified list of air-conditioning manufacturers will be included in the 1935 REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

Refrigerator Lights

No. 2068 (Exporter, New York)—"We would like to obtain the name of manufacturers making the interior electrical lamp receptacle and switch, as used in domestic refrigerator cabinets."

Answer: The following manufacturers make lamp receptacles and switches for use in interior lighting of electric refrigerator cabinets:

Arrow-Hart & Hegeman Electric Co.
103 Hawthorne St., Hartford, Conn.
Cutler-Hammer, Inc.
315 N. 12th St., Milwaukee, Wis.
General Electric Co., Bridgeport, Conn.
M. M. Fleron & Sons, Inc.
113 N. Broad St., Trenton, N. J.

Government Booklets

No. 2069 (Distributor, Iowa)—"The writer would appreciate it very much if you would advise him where to obtain the booklets published by the United States Bureau of Standards on the following:

"Electric refrigeration, ice box refrigeration, insulation."

Answer: For information concerning booklets published by the United States Bureau of Standards address the Superintendent of Documents, Washington, D. C. It is our understanding that these booklets must be paid for in advance.

Machine Ratings

No. 2070 (Dealer, Alabama)—"Some time ago you published the ratings on different manufacturers' commercial compressors. We have mislaid our copy that this information was published in, and we would appreciate it very much if you would send us three copies of this issue, giving the manufacturers' ratings and capacity of their commercial compressors."

"We are primarily interested in General Electric, Kelvinator, and Frick."

Answer: Specifications and ratings of commercial refrigeration units were published in the September 12 issue of ELECTRIC REFRIGERATION NEWS. You will note that General Electric ratings are omitted, and the reasons for this are outlined in a letter from General Electric Co., which is printed on the editorial page of the September 12 issue.

Welsbach Service

No. 2071 (Reader, Ontario)—"Can you use SO₂ in the Welsbach unit?"

Answer: Complete instructions on servicing Welsbach household electric refrigerator units were published in the June 13, 20, and 27 issues of ELECTRIC REFRIGERATION NEWS.

For further information address the Welsbach Co., Essex and Ellis Sts., Gloucester City, N. J.

Canadian Patent

No. 2072 (Manufacturer, Illinois)—"About three years ago two refrigeration patents were issued to us in Canada. They appear to have considerable merit and it seems a shame to allow the three-year protection period to expire, permitting any interested party to petition the Commissioner of Patents for the license or cancellation."

"It occurs to us that you might furnish us with the names of one or two reputable domestic refrigeration manufacturers in Canada, possibly interested in entering into negotiations with us for a license agreement."

Makers of Hardware

No. 2073 (Manufacturer, Illinois)—"Will you kindly furnish us with a list of refrigerator hardware manufacturers?"

Answer: Manufacturers of refrigeration hardware are listed on page 172 of the 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK.

Sabeco Bronze

No. 2074 (Manufacturer, Switzerland)—"For the manufacture of a certain article we should like to purchase 'Sabeco' bronze. Unfortunately we do not know the address of the factory which produces the so-called 'Sabeco' bronze. In case you are unable to procure us by return mail the exact address of the firm in question, we should be obliged if you would let appear a respective announcement in the next number of your journal, the costs involved to be debited to our account."

Answer: "Sabeco" bronze is made by the Fredericksen Co., Saginaw, Michigan.

Harris Ammonia System

No. 2075 (Service Company, Texas)—"We wish to learn the address and manufacturer's name of the Harris ammonia refrigerating system."

Answer: The Harris ammonia machine is made by Harris Ice Machine Works, Inc., 188 Tillamook St., Portland, Ore.

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